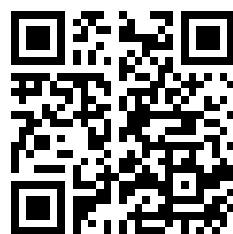

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COGNATE WORDS IN THE CHINESE PHONETIC SERIES

BY

BERNHARD KARLGREN

The fact that the Chinese monosyllabic words are not »isolated» units, each one unaffinite with all the rest, but that they often form groups of two or several, or even many, which are cognate, i. e. different aspects of one and the same word stem, was already recognized by the scholars of the 19th century, and the problem of such »word families» was taken up for examination by A. Conrady and others. Even a student who is not linguistically trained and who knows the Chinese words only in their modern phonetic garb will easily recognize the fact that, for instance, 看 k' a n 'to see' and 見 k i e n 'to see' and 觀 k u a n 'to see' must be cognate words, or that 不 p u 'not' and 弗 f u 'not' are affinite, that 吾 w u 'I, we' and 我 w o 'I, we' are allied, or that 死 s i 'to die' and 尸 s h i 'corpse' must be variants of one word stem. In the BMFEA 5 (1933) I published a paper: Word Families in Chinese, in which I took up this theme for more comprehensive treatment. At that time I was able to go much further than the early sinologues could do, thank to the fact that the pronunciation of the Chinese words in early Chou time, »Archaic Chinese», had been reconstructed by linguistic methods in its essential features. Phonetic similarities revealing real and reliable affinities, which are quite obscured in the modern readings of the words, owing to phonetic changes in the lapse of two and a half millennia, made it possible to establish large groups of words which may be suspected of being cognate (»word families»). My list was, of course, only tentative: in a great many of the cases adduced the affinity is obvious and undeniable, in other cases it is only probable or even merely possible and it was left to future research to determine which of the stem alternations proposed could be proved. Even so, a considerable number of alternations were represented by so many safe examples (e. g. those treated under A — D below) that they could be stated to be established facts. A small selection of such alternations have again been recorded by me in my popular book *The Chinese Language, an Essay on its Nature and History* (N. Y. 1949, pp. 79—95); a most important result in this context was the fact that many of the said alternations implied different grammatical functions (e. g. 度 *d'ák 'to measure', verb: same char. *d'ág 'a measure', noun).

In the present paper I shall revert to this question from a different point of

view and on a limited scale. The question I wish to pose is this: did the Chinese literary men of early Chou time ever feel and realize that two or several such affinite words really did belong together, were cognate, were different aspects of »one and the same word»? To a limited extent we are in a position to answer this question thanks to the peculiar nature of the Chinese script. The inventors of the graphs sometimes revealed how they felt in this respect.

In a great many cases they either had no such feeling or did not trouble to express it by the aid of the graphs they composed. Such is, for instance, the first example given above: when they wrote **k'án* 看 but **k'ian* 見 and **kwán* 觀,¹⁾ three characters that are quite dissimilar, they give no hint as to whether they felt those words to be cognate or not. But in a considerable number of other cases they indicated quite unmistakably that they were perfectly aware of the affinity of the words concerned. A fine example of this is the word 度 adduced above. They had one word **d'ák* 'to measure' and another word **d'ág* 'a measure', and the script inventors evidently realized their affinity and wrote them both with the same character: 度. When they had **p'wən* / *p'wən* / *fən* 'to divide' and **b'wən* / *b'wən* / *fən* 'a part, a share', they emphatically indicated that they were two variants of »one and the same word» by writing them both 分.

Examples like these are simple and undubitable, but from them we can proceed to somewhat more complicated cases. To begin with, some general principles have to be made clear.

When we have a »phonetic series» like this: 牙 **ngá* / *nga* / *yá* 'tooth': 芽 **ngá* / *nga* / *yá* 'a sprout': 訝 **ngá* / *nga*- / *yá* 'to welcome, receive', it looks at first sight as if the second and third characters are composed in exactly the same way: the second char. 'sprout' consists of »grass» as »radical» (sense determinator) and **ngá* 'tooth' as phonetic and, similarly, the third character 'to welcome' consists of »speak» as radical and **ngá* 'tooth' as phonetic. Yet this is quite erroneous. In the former case 芽 **ngá* 'sprout' is (etymologically) the same word as **ngá* 'tooth' (the sprouts being »teeth» shooting forth from the soil). The 牙 in 芽 is not a »phonetic» but the fundamental, primary graph, the same as 'tooth', and when the word, in one of its variants of sense, means the »teeth» on the soil, the original graph 牙 has merely been elucidatingly enlarged by the addition of »grass» on top. The case 訝 is quite different. Here the character 牙 **ngá* has been borrowed (*kia tsie*) to signify the homophonous word **ngá* 'to welcome' — the two are in no way cognate; and when it has become too confusing to have 牙 in both these meanings there has been added, in the second case, a radical »to

¹⁾ In the following pages the Archaic forms are given in italics with an asterisk, the Ancient forms in italics without asterisk, and the modern Mandarin forms in spaced Roman letters. The tones in Anc. Chin. are indicated by a colon for the *shang sheng* (rising tone), by a hyphen for the *k'ü sheng* (falling tone) and by the absence of a tone mark for the *p'ing sheng* (even tone): 姑 **ko* / *kuo* / *kü*: 古 **ko* / *kuo*: / *kü*: 故 **ko* / *kuo*- / *kü*.

speak» in order to distinguish them. In this example, then, we have a *real* case of one radical and one phonetic.

It is now important to remember that the addition of radicals — whether as elucidating enlargements added to the primary graph, as in 芽, or as real distinguishing sense indicators added to phonetic-loan characters, as in 訝 — is on the whole a comparatively late phenomenon. The invention of the radical trick was made quite early, as a few cases in Yin and early Chou inscriptions show, but it was only rarely applied in the early part of the Chou dynasty. In fact, radicals occur with some frequency only in the last centuries of the Chou era. There are still today a number of examples in which radicals were never added: 來 *lāg / lāi / lai 'a kind of wheat' (Shī king) was borrowed for *lāg / lāi / lai 'to come', and to this day 'to come' is still written 來 without any distinguishing addition. In the bronze inscriptions of the early Chou centuries this phenomenon (borrowed characters, *kia tsie*, without radicals) is almost the rule: 者 serves for 諸, 隹 for 唯, 乎 for 呼, 女 for 汝 (so often in the classical texts as well), 古 for 故 etc. The addition or non-addition of radicals is therefore, from our point of view in this paper, quite immaterial: if there is a radical, there are great chances that it was not there originally but was added in late Chou time or (sometimes) even in Han time.

Let us see what this important fact implies for the purpose of our investigation. Reverting to our series *ngā / nga / y a above we may take it for granted that at an early stage 牙 alone served both for *ngā 'tooth' and for *ngā 'sprout' and for *ngā 'to welcome', without any additional radicals; in other words that 芽 had its elucidating (specializing) »grass» and 訝 its distinguishing element »to speak» added later on. The problem, from our point of view, is then to decide whether 牙 in 芽 was, not a phonetic, but really the primary graph itself — in which case the script masters felt *ngā 'tooth' and *ngā 'sprout' to be one and the same word — or else it was merely a *kia tsie* phonetic loan for the word *ngā 'sprout' (just as 牙 for 訝 was merely a phonetic loan) — in which case they did not realize the stem identity of *ngā 'tooth' and *ngā 'sprout'. Our criterion can here only be an affinity of meaning sufficiently obvious to convince us that the identity was conceived and expressed by the use of the same character 牙, just as *piwən 'to divide' and *b'iwən 'a share' were expressed by the use of the same character 分. If we are sufficiently cautious, we can very well find a long series of cases of this »identity» type, as will be shown below. It will suffice to state here that we need not consider the existence of a radical in the modern compound character as decisive. The case 牙 'tooth' and 芽 'sprout' (primarily 牙 'tooth' and 牙 'sprout') is in principle quite identical with the case 分 'divide' and 分 'share'.

We may, however, take one further step. We have three characters: 付 *piu / piu- / fu 'to deliver' and 附 *b'iu / b'iu- / fu 'to attach' to adjoin' and 駙 *b'iu / b'iu- / fu 'additional horse' (to a team). The 付 *piu 'deliver' is here obviously

a typical loan character (*kia tsie*) for both words **b'iu*, it has no stem affinity with them. But the very fact that the same phonetic (*kia tsie*) 付 was used both for **b'iu* 'to adjoin' and for **b'iu* 'additional horse' is highly significant. The latter two are evidently one and the same word, in different variants of meaning. When the script masters borrowed 付 'to deliver' both for **b'iu* 'to adjoin' (later filled out into 附) and for **b'iu* 'additional horse' (later filled out into 駟), it seems evident that they felt the two **b'iu* to be one and the same word, or, let us say, two variants of the same stem. Here again we draw the conclusion: when two words in the orthodox script have the same phonetic and when their meaning unequivocally indicates stem affinity, we conclude that their affinity has been felt and realized by the script masters, irrespective of the different distinguishing radicals applied at a later date.

After these considerations of a general nature, let us pass on to a selection of illustrating examples. We may first dispose of the cases belonging to the category **ngâ*: **ngâ* discussed above (identity of two words). Most of them are so obvious¹⁾ that there is no need to make a list of them: any reader of the *Grammata Serica* (a new edition of which, with tones recorded, is at present in the press) will after a rapid perusal find scores of such obvious instances. But we had better quote a few examples in which the etymological identity of the two members of a pair is not quite so self-evident: it shows the acumen of the ancient Chinese script masters in realizing their identity and hence placing them together in the script:

1. **ngia* / *ngiê*- / *y i* right, righteous: 2. *id.* (i. e. same reading and with the same tone) to determine what is right, to discuss, a judgment;
3. **kâ* / *ka* / *k i a* house, family: 4. *id.* (to get a house:) to marry (said of a woman);
5. *ko* / *kuo*: / *k u* drum: 6. *id.* blind (»a drummer»: the blind were made musicians);
7. **g'o* / *γuo*- / *h u* intertwining, interlacery: 8. *id.* railings, fence;
9. **tân* / *tân* / *t a n* single, simple: 10. *id.* unlined garment;
11. **χo* / *χuo*: / *h u* tiger: 12. *id.* a tally (tiger-shaped);
13. **djan* / *jän* / *y e n* extend, spread out: 14. *id.* (a »spread»:) a mat;
15. *lian* / *liän* / *l i e n* in a row, consecutively: 16. *id.* rippling waves;
17. **dz'üwan* / *dz'üwän* / *t s ' ü a n* complete, faultless: 18. *id.* (faultless:) one-coloured sacrificial animal;
19. **g'wan* / *γwan* / *h u a n* turn round, return: 20. *id.* a ring;
21. **müwän* / *müwän*- / *w a n* extended, drawn out: 22. *id.* creeping plant;
23. **d'iat* / *d'iat* / *c h ' e* penetrate: 24. *id.* (penetrable:) limpid;
25. **liät* / *liät* / *l i e* divide, separate, distribute: 26. *id.* divide, tear apart;
27. **kwât* / *kuât* / *k u o* to bind, tie: 28. *id.* a hair knot;
29. **kwäd* / *kuäi*- / *k u e i* put together, to add up: 30. *id.* joining point of the ends of a belt;
31. **liäd* / *liäi*- / *l i* sharp, piercing, cruel: *id.* epidemic, 33. *id.* a stinging insect;

¹⁾ E. g. 四 **sīar* / *sī*- / *s i* 'four': 駟 **sīar* / *sī*- / *s i* 'team of four horses'; 參 **ts'am* / *ts'äm* / *t s ' a n* 'a triad': 駟 **ts'am* / *ts'äm* / *t s ' a n* 'team of three horses'; 員 **güwan* / *jüwän* / *y ü a n* 'round': 圓 **güwan* / *jüwän* / *y ü a n* 'round'; etc.

34. *b'iad / b'iai- / p i damage, spoil, worn out: 35. *id.* to spoil, to ruin, 36. *id.* to kill, to die;
 37. *g'iwen / yiwen / h ü a n dark-coloured, black: 38. *id.* (darkened:) troubled sight;
 39. *i'ën / i'ën / y i n to rest upon, lean upon, rely upon etc.: 40. *id.* (what is leaned on:) a mat (the primary graph depicts a man outstretched on a mat);
 41. *g'wän / yuän- / h u n latrine: 42. *id.* soiled, disorderly;
 43. 44. *xiwän / xiüan / h ü n smoke, fume, fragrance: 45. *id.* merit;
 46. *dz'iat / dz'iet / t s i (to be pained by:) to hate: 47. *id.* jealous;
 48. *i'iwät / i'iuët / c h ' u go out, bring out: 49. *id.* expel, degrade;
 50. *d'iwät / dz'iuët / s h u road, path: 51. *id.* (to path:) go along, follow, bring along, transmit;
 52. *dz'iwäd / zwi- / s u e i to progress, go along, follow: 53. *id.* channel, path, tunnel;
 54. *k'iar / k'iei / k i small: 55. *id.* delicate spring, fine mechanism;
 56. *m'iar / m'ji / m e i (margin of the eye:) eyebrow: 57. *id.* margin of a stream;
 58. *g'ep / yäp / h i a accord with, unite, assemble: 59. *id.* sacrifice to the ancestors unitedly, collectively;
 60. *kwäk / kwäk / k u o outer wall of a city: 61. *id.* outer coffin;
 62. *s'jäk / s'jäk / s i of old, formerly, yesterday: 63. *id.* (old meat:) dried meat;
 64. *s'eng / sung / s h e n g to live: 65. *id.* (living creature:) (sacrificial) animal;
 66. *mieng / mieng / m i n g dark, darkened: 67. *id.* shut the eyes;
 68. *dz'äg / dz'äi / t s ' a i (mental resources:) ability, talent: 69. *id.* stuff, material, disposition, 70. *id.* (economical resources:) wealth, valuables;
 71. *g'iü / jü- / y u right hand, on the right: 72. *id.* to assist;
 73. *p'óg / páu / p a o to wrap, contain: 74. *id.* womb;
 75. *kung / kung / k u n g work: 76. *id.* achievement, 77. *id.* to work at, enterprise etc.
 78. *d'ung / d'ung / t ' u n g bring together, join, assemble: 79. *id.* (mixture:) bronze;
 80. *mung / mung / m e n g to cover: 81. *id.* (covered eyes:) blind.

From the preceding categories, in which it is obvious that the early script masters realized the etymological identity, we shall pass on to some more interesting categories, in which the two members are not phonetically identical (the tone inclusive, as in the case *ngä) but show a phonetic contrast.

A simple category is here, first, the one in which the stem variation consists exclusively in a change of tone. A well-known example is 好 where the character read *xóg / xáu- / h a o (rising tone) means 'fine, good' and read *xóg / xáu- /

1.義 2.議 3.家 4.嫁 5.鼓 6.替 7.互 8.桓 9.單 10.禪 11.虎 12.琥 13.延 14.筵 15.連 16.漣 17.全 18.拴 19.還 20.環 21.環 22.蔓 23.蔓 24.徹 25.列 26.裂 27.括 28.髻 29.會 30.繪 31.厲 32.癘 33.蠱 34.敝 35.弊 36.斃 37.玄 38.眩 39.因 40.茵 41.園 42.淵 43.蕪 44.薰 45.勳 46.疾 47.嫉 48.出 49.黜 50.術 51.述 52.遂 53.隧 54.幾 55.機 56.眉 57.湄 58.洽 59.裕 60.郭 61.擲 62.昔 63.腊 64.生 65.牲 66.冥 67.瞑 68.才 69.材 70.財 71.右 72.佑 73.包 74.胞 75.工 76.功 77.攻 78.同 79.銅 80.蒙 81.朦

h a o (falling tone) means 'to love'. In this category as well, the early scribes undoubtedly felt that they had to do with one and the same «word» (word stem). The instances of this stem variation are very numerous, and we shall cite a sufficiently extensive list to show its importance:

82. *tsá / tsá: / t s o left, to the left: 83. *tsá / tsá- / t s o to assist;
 84. *ka / ka / k i a to add, apply: 85. *ka / ka- / k i a (to apply horses to:) to yoke;
 86. *ngia / ngjiç- / y i right, righteous: 87. *ngia / ngjiç / y i proper demeanour;
 88. *ko / kuo: / k u ancient: 89. ko / kuo- / k u anterior, *ci-devant*, premise, cause;
 90. *ts'wá / ts'uá- / t s ' o to cut: 91. ts'wá / ts'uá: / t s ' o to cut small;
 92. *kjo / kjo- / k ü to sit down: 93. *kjo / kjo- / k ü to squat;
 94. *i'jo / ts'jwo: / c h ' u to dwell, to place: same char. *i'jo / ts'jwo- / c h ' u a place;
 95. *njo / njo: / n ü woman: same char. *njo / njo- / n ü to give a wife to;
 96. *sliu / sliu- / s h u number: same char. *sliu / sliu- / s h u to count;
 97. *dziu / dziu- / s h u tree: same char. *dziu / dziu- / s h u to plant, place upright;
 98. *ts'ju / ts'ju: / t s ' ü to take: same char. and 98. *ts'ju / ts'ju- / t s ' ü to take wife;
 100. *piu / piu- / f u deliver: 101. *piu / piu: / f u (the delivery place:) repository;
 102. *án / án / a n peace, tranquil: 103. *án / án- / a n to tranquillize, repress;
 104. *d'án / d'án / t ' a n shoot pellets at: same char. *d'án / d'án- / t a n pellet;
 105. *nán / nán / n a n difficult: same char. *nán / nán- / n a n difficulty;
 106. *kwán / kwán / k u a n cap: same char. *kwán / kwán- / k u a n to cap, put a cap on;
 107. *kán / kán / k i e n interstice, interval: same char. *kán / kán- / k i e n find a crevice, find fault with;
 108. *d'ian / d'ian: / s h a n good: 109. *d'ian / d'ian- / s h a n delicacies, cooked food, and 110. *d'ian / d'ian- / s h a n (make good:) to repair;
 111. *d'iwán / d'iwán / c h ' u a n to transmit: same char. *d'iwán / d'iwán- / c h u a n (what has been transmitted:) a record;
 112. *tiwán / tiwán: / c h u a n turn round, transfer, remove: 113. *tiwán / tiwán- / c h u a n (transferring, transmitting place:) relay (of post);
 114. *giwán / giwán: / y ü a n far, distant: same char. *giwán / giwán- / y ü a n to keep far from, leave;
 115. *d'ien / d'ien / t ' i e n field: same char. *d'ien / d'ien- / t i e n to cultivate the land;
 116. *dién / ién: / y i n to pull: 117. *dién / ién- / y i n strap for pulling carriage;
 118. *d'ién / d'ién / c h ' e n set forth, arrange: same char. *d'ién / d'ién- / c h e n battle array;
 119. *dzién / dzién: / t s i n exhaust, consume: 120. *dzién / dzién- / t s i n ashes, combusted;
 121. *pién / pién / p i n guest: 122. *pién / pién- / p i n guest receiver, to welcome;
 123. *dziwén / dziwén / s ü n all round, a round, a decade (of days): 124. *dziwén / dziwén- / s ü n go everywhere, all round;
 125. *g'an / g'an: / h e n oppose, refractory: 126. *g'an / g'an- / h e n to hate, displeased;
 127. *ts'wán / ts'wán- / t s ' u n thumb, inch: 128. *ts'wán / ts'wán: / t s ' u n to measure;
 129. *miwán / miwán / w e n to hear: same char. *miwán / miwán- / w e n to be heard, fame;
 130. *g'ian / g'ian: / k i n near: same char. *g'ian / g'ian- / k i n to be near to;
 131. *sien / sien / s i e n before: same char. *sien / sien- / s i e n to go before, precede;

132. **kjər* / *kjɛi* / *ki* small: same char. **kjər* / *kjɛi* / *ki* few, (how few:) how many;
 133. **jər* / *jɛi* / *yi* clothes: same char. **jər* / *jɛi* / *yi* to wear;
 134. **liwər* / *ljwi* / *lei* to wind around, be attached to (as a liana): 135. **liwər* / *ljwi* / *lei* climbing plant;
 136. **piwər* / *pjwɛi* / *fei* it is not: 137. **piwər* / *pjwɛi* / *fei* not;
 138. **tjər* / *tiei* / *ti* root, base, foundation, 139. *id.* bottom: 140. **tjər* / *tiei* / *ti* to lower;
 141. **d'jər* / *d'iei* / *ti* younger brother: same char. **d'jər* / *d'iei* / *ti* (younger-brotherly:) respectful towards elder brothers;
 142. **ts'jər* / *ts'iei* / *ts'i* consort, wife: same char. **ts'jər* / *ts'iei* / *ts'i* to give wife to;
 143. **d'jər* / *d'i* / *ch'i* to tarry, slow: same char. **d'jər* / *d'i* / *ch'i* to wait;
 144. **piŭm* / *piung* / *feng* (wind:) air, tune: 145. **piŭm* / *piung* / *feng* to chant, recite;
 147. **səm* / *səm* / *san* three: same char. **səm* / *səm* / *san* thrice;
 146. **tām* / *tām* / *tan* to carry on the shoulder: same char. **tām* / *tām* / *tan* burden;
 148. **iam* / *iam* / *yin* northern side, shade, darkness: same char. **iam* / *iam* / *yin* to shelter;
 149. **iam* / *iam* / *yin* to drink: same char. **iam* / *iam* / *yin* to give to drink;
 150. **šiam* / *šiam* / *shen* deep: same char. **šiam* / *šiam* / *shen* depth;
 151. **niəm* / *niəm* / *jen* to carry, sustain: same char. **niəm* / *niəm* / *jen* burden;
 152. **sāng* / *sāng* / *sang* (loss:) mourning, burial: same char. **sāng* / *sāng* / *sang* to lose;
 153. **d'iang* / *d'iang* / *ch'ang* long: same char. **d'iang* / *d'iang* / *chang* length, measure of length;
 154. **d'iang* / *d'iang* / *chang* staff: same char. **d'iang* / *d'iang* / *chang* (have for staff:) lean on;
 155. **tāng* / *tāng* / *tang* to be equal to, rank with, to match: same char. **tāng* / *tāng* / *tang* suitable;
 156. **diang* / *diang* / *shang* up, above: same char. **diang* / *diang* / *shang* to rise;
 157. **tsiang* / *tsiang* / *tsiang* to bring, take, lead: same char. **tsiang* / *tsiang* / *tsiang* leader;
 158. **dz'ang* / *dz'ang* / *ts'ang* to store: same char. **dz'ang* / *dz'ang* / *tsang* a store;
 159. **niang* / *niang* / *jang* to thrust aside, expel: 160. **niang* / *niang* / *jang* to cede, withdraw, yield;
 161. **ziang* / *ziang* / *yang* to nourish: same char. **ziang* / *ziang* / *yang* to support (sc. parents);

82.左 83.佐 84.加 85.駕 86.義 87.儀 88.古 89.故 90.坐 91.胜 92.居 93.踞 94.處 95.
 女 96.數 97.樹 98.取 99.娶 100.付 101.府 102.安 103.按 104.彈 105.難 106.冠 107.閒 108.善
 109.膳 110.繕 111.傳 112.轉 113.傳 114.遠 115.田 116.引 117.韌 118.陳 119.盡 120.燼 121.賓 122.
 饋 123.旬 124.徇 125.恨 126.恨 127.寸 128.忖 129.聞 130.近 131.先 132.幾 133.衣 134.屢 135.藟
 136.非 137.匪 138.氏 139.底 140.低 141.第 142.妻 143.遲 144.風 145.諷 146.擔 147.三 148.陰 149.
 飲 150.深 151.任 152.喪 153.長 154.杖 155.當 156.上 157.將 158.藏 159.攘 160.讓 161.養 162.兩

162. **liang / liang*: / liang two, a pair: same char. **liang / liang-* / liang (a two-wheeler:) carriage;
 163. **liang / liang* / liang a measure: same char. **liang / liang-* / liang to measure;
 164. **giwang / jiwang* / wang king: same char. **giwang / jiwang-* / wang to be king, to rule;
 165. **kǎng / kvng* / keng to change: same char. **kǎng / kvng-* / keng again;
 166. **g'ǎng / γvng* / hing to walk, a road, to act: same char. **g'ǎng / γvng-* / hing action;
 167. **kiǎng / kivng*: / king boundary, limit: same char. **kiǎng / kivng-* / king end, in the end;
 168. **piǎng / pivng*: / ping to hold, grasp: 169. **piǎng / pivng-* / ping a handle;
 170. **giwǎng / jiwvng*: / yung long: 171. **giwǎng / jiwvng-* / yung (to draw out long:) to chant;
 172. **kiěng / kivng*: / king reverent, respectful: 173. **kiěng / kivng-* / king (to overawe:) to warn, admonish;
 174. **điěng / źiǎng* / ch'eng to load, to fill: same char. **điěng / źiǎng-* / sheng (loaded full:) ample, abundant;
 175. **t'iěng / tsiǎng-* / cheng straight, correct, regulate: same char. **t'iěng / tsiǎng* / cheng (regulating:) first (sc. month), and 176. *id.* (a correction:) a punitive expedition;
 177. **d'ieng / d'ieng*: / t'ing stick, staff: 178. **d'ieng / d'ieng* / t'ing stalk, stem;
 179. **t'ieng / t'ieng* / t'ing to hear: same char. **t'ieng / t'ieng-* / t'ing to listen to, obey;
 180. **tiěg / t̃i* / chī to know: same char. **tiěg / t̃i-* / chī knowledge, wisdom;
 181. **iəng / iəng-* / ying to respond, correspond, conform: same char. **iəng / iəng* / ying (conforming to what it should be:) ought, of right;
 182. **siəng / siəng-* / sheng to vanquish, surpass: same char. **siəng / siəng* / sheng equal to, capable of;
 183. **t'iəng / tsiəng* / ch'eng to weigh: same char. **t'iəng / tsiəng-* / ch'eng (balancing:) equal to, corresponding to;
 184. **d'iəng / dźiəng* / ch'eng to mount, ascend: same char. **d'iəng / dźiəng-* / sheng (what is mounted:) carriage, and (what is set up, recorded:) records, annals;
 185. **ts'əg / ts'əi-* / ts'ai to cull, pluck: same char. **ts'əg / ts'əi-* / ts'ai (what is culled for incomes:) appanage, and 186. **ts'əg / ts'əi-* / ts'ai (culled herbs:) vegetables;
 187. **ləg / ləi* / lai to come: same char. **ləg / ləi-* / lai (cause to come:) attract, stimulate;
 188. **tiōng / t̃iung* / chung middle, centre: same char. **tiōng / t̃iung-* / chung to hit the centre, to hit;
 189. **điōg / źiəu-* / shou to receive: 189 b. **điōg / źiəu-* / shou to hand over, give;
 190. **siōg / siəu-* / shou to keep, to guard: same char. **siōg / siəu-* / shou territory in somebody's guard, fief;
 191. **ts'og / ts'au-* / ts'ao to grasp, hold: same char. **ts'og / ts'au-* / ts'ao (what is held on to:) purpose, intent;
 192. **log / lau* / lao toil: same char. **log / lau-* / lao (acknowledge somebody's toil:) to recompense;
 193. **siog / siəu-* / sia o little, small: 194. **siog / siəu-* / sia o (to be a miniature of:) similar to one's father, to take after the father;

195. *m̥iog / m̥iäu- / m i a o small, minute: 196. *m̥iog / m̥iäu- / m i a o (infinitesimal, incomprehensible:) mysterious, marvellous;
 197. *l̥iog / l̥iäu- / c h a o bright: 198. *l̥iog / l̥iäu- / c h a o to shine on;
 199. *d̥iung / i̯wong- / y u n g to use, employ: 200. *d̥iung / i̯wong / y u n g to use, employ;
 201. *d̥iung / d̥i̯wong- / c h u n g heavy: same char. *d̥iung / d̥i̯wong / c h ' u n g double;
 202. *l̥iung / l̥i̯wong- / c h u n g seed, different kinds of grain: same char. *l̥iung / l̥i̯wong- / c h u n g to sow;
 203. *dz̥iung / dz̥i̯wong / t s ' u n g to follow: same char. *dz̥iung / dz̥i̯wong- / t s u n g follower;
 204. *b̥iung / b̥i̯wong- / f e n g to receive: 205. *b̥iung / b̥i̯wong- / f e n g (what is received:) salary.

In the following categories the answer to our principal question (whether the early script masters had a feeling of the affinity of two or more »words«) is not so self-evident:

A. Stem variation consisting in an alternation of tenuis and aspirated media as initial:

206. *kia / k̥iə / k i odd (number): same char. *g̥'ia / g̥'j̥iə / k ' i strange, extraordinary;
 207. *pwo / puo / p u to eat: 208. *b'wo / b'uo- / p u to have food in the mouth;
 209. *k̥iwo / k̥iu- / k ü frightened glance, anxious: 210. g̥'wo / g̥'iu- / k ü to fear;
 211. *p̥iwo / p̥iu- / f u (»father«) second part of honorific words, e. g. Kia-fu: same char. *b̥'wo / b̥'iu- / f u father;
 212. *k̥iu / k̥iu / k ü (complete:) all: 213. *g̥'iu / g̥'iu- / k ü provide, make complete, complete;
 214. *t̥iu / t̥iu- / c h u to prop up, support: 215. *d̥'iu / d̥'iu- / c h u pillar;
 216. *k̥án / k̥án / k a n shield: 217. *g̥'án / g̥'án- / h a n protect, ward off;
 218. *t̥wán / t̥wán- / t u a n a slice of dried meat: 219. *d̥'wán / d̥'wán- / t u a n torn to slices;
 220. *p̥wán / p̥wán- / p a n half: 221. *b̥'wán / b̥'wán- / p a n (cleaving:) dividing bank;
 222. *k̥ǎn / k̥ǎn / k i e n interstice, space between: same char. *g̥'ǎn / g̥'ǎn- / h i e n (interstice in time:) leisure;
 223. *k̥iwan / k̥iwan- / k ü a n to roll: same char. g̥'wan / g̥'wan- / k ' ü a n curved;
 224. *t̥iwan / t̥iwan- / c h u a n transmitting place, relay (of post etc.): same char. *d̥'wan / d̥'wan- / c h ' u a n to transmit;

163. 量 164. 王 165. 更 166. 行 167. 竟 168. 東 169. 棟 170. 永 171. 詠 172. 敬 173. 警 174. 盛 175. 正 176. 征 177. 挺 178. 廷 179. 聽 180. 知 181. 應 182. 勝 183. 稱 184. 乘 185. 采 186. 菜 187. 來 188. 中 189. 受 189b. 授 190. 守 191. 操 192. 勞 193. 小 194. 肖 195. 少 196. 妙 197. 昭 198. 照 199. 用 200. 庸 201. 重 202. 種 203. 從 204. 奉 205. 俸

206. 奇 207. 餉 208. 哺 209. 饕 210. 饕 211. 父 212. 俱 213. 具 214. 柱 215. 柱 216. 干 217. 杆 218. 肢 219. 段 220. 半 221. 畔 222. 間 223. 卷 224. 傳 225. 見 226. 會 227. 民 228. 很 229. 分 230. 幾 231. 幾 232. 比 233. 皆

225. **kian* / *kien-* / *kien* to see: same char. **g'ian* / *γien-* / *hien* (to be seen:) to appear, conspicuous;
 226. **kwād* / *kuāi-* / *kuei* (addition:) account: same char. **g'wād* / *γuāi-* / *huei* assemble, collect;
 227. **kən* / *kən-* / *ken* refractory, obstinate: 228. **g'ən* / *γən:* / *hen* oppose, quarrelsome;
 229. **piwən* / *piuən* / *fen* to divide: same char. **b'iwən* / *b'iuən-* / *fen* part, share;
 230. **kīər* / *kjçi* / *ki* near: 231. **g'īər* / *g'jçi* / *k'i* (nearest to the capital:) Royal domain;
 232. **piər* / *pji-* / *pi* combine, unite, compare: same char. **b'īər* / *b'ji-* / *pi* assemble, go together with;
 233. **kēr* / *kāi* / *kie* all: 234. **g'ēr* / *γāi* / *hie* in harmony;
 235. **tsiār* / *tsiē:* / *tsi* defame, slander: 236. **dz'īār* / *dz'īē* / *tsi* a defect, fault;
 237. **tsiam* / *tsiām* / *tsien* to moisten, to flow to: same char. **dz'iam* / *dz'iam:* / *tsien* dropwise, gradually;
 238. **klīam* / *kīām:* / *kien* to control, restrict: 239. **g'liam* / *g'jām:* / *kien* restrict, frugal;
 240. **kāp* / *kāp* / *kia* to press between, pinchers: 241. **g'āp* / *γāp* / *hia* (pinched:) narrow;
 242. **kiap* / *kiep* / *kie* (pinchers:) chopsticks: 243. **g'iap* / *γiep* / *hie* press under the arm;
 244. **kəp* / *kāp* / *ko* (shutter:) gate: 245. **g'əp* / *γəp* / *ho* to join, unite, to shut;
 246. **tiang* / *tīang:* / *chang* to grow tall, grown up, senior: same char. **d'iang* / *d'iang* / *ch'ang* long, tall;
 247. **pāk* / *puk* / *po* (the white-haired one:) eldest, chief: 248. **b'āk* / *b'uk* / *po* white;
 249. **tsiāk* / *tsiāk* / *tsi* to walk reverently: same char. **dz'iāk* / *dz'iāk* / *tsi* to trample;
 250. **tsiēng* / *tsiäng:* / *tsing* a well: 251. **dz'iēng* / *dz'jäng:* / *tsing* a pitfall, pit;
 252. **piēng* / *piäng-* / *ping* grieved: 253. **b'iēng* / *b'jäng-* / *ping* distress, suffer, sickness;
 254. **kēg* / *kai:* / *kie* to loosen: same char. **g'ēg* / *γai:* / *hie* (unloosened:) remiss, lax, careless;
 255. **piēk* / *piäk* / *pi* ruler: same char. **b'iēk* / *b'iak* / *pi* law;
 256. **tsiēk* / *tsiäk* / *tsi* spine: 257. **dz'iēk* / *dz'iak* / *tsi* emaciated;
 258. **piēg* / *pjiē* / *pei* low: 259. **b'iēg* / *b'jiē:* / *pei* low;
 260. **kiweng* / *kiweng* / *kiung* outlying parts, far from the city: 261. **g'iweng* / *γiweng:* / *hiung* distant;
 262. **tiēk* / *tiēk* / *ti* principal wife: 263. **d'iek* / *d'iek* / *ti* an equal, a match, opponent;
 264. **tiēg* / *tiei-* / *ti* sovereign, God: 265. **d'ieg* / *d'iei-* / *ti* sacrifice to the highest Spirit;
 266. **tiēg* / *tiei* / *ti* bank, dyke: 267. **d'ieg* / *d'iei* / *t'i* bank, dyke;
 268. **tsəng* / *tsəng* / *tseng* to accumulate, double: 269. **dz'əng* / *dz'əng* / *ts'eng* in two storeys or layers, double;
 270. **tsəg* / *tsüi-* / *tsai* to load: same char. **dz'əg* / *dz'üi-* / *tsai* load;
 271. **pwəg* / *puüi-* / *pei* the back: same char. **b'wəg* / *b'uüi-* / *pei* to turn the back on;
 272. **kīəg* / *kji* / *ki* a full fixed time: **g'īəg* / *g'ji* / *k'i* a stipulated time, to expect;
 273. **tsiəg* / *tsi:* / *tsi* child: 274. **dz'īəg* / *dz'i-* / *tsi* to breed;
 275. **kēg* / *kāi-* / *kie* to guard against, warn: 276. **g'ēg* / *γāi:* / *hie* to overawe, frighten;

277. *tjōng / t̃iung / ch un g middle: 278. *d'jōng / d'jūng- / ch un g (the middle one): the 2nd of brothers;
 279. *kōng / k̃ang- / k i a n g descend: same char. *g'ōng / yāng / h i a n g submit;
 280. *pōg / p̃au / p a o to wrap: 281. *b'ōg / b'āu- / p a o to embrace, carry in the arms;
 282. *piōk / piuk / f u double: 283. *b'iõk / b'iũk / f u return, recommence, repeat;
 284. *kiōg / kĩu- / k i u to twist: 285. *g'iõg / g'iũ / k' i u long and curved, horn-shaped;
 286. *tsiōg / ts̃iu- / t s i u wine, spirits: 287. *dz'iõg / dz'iũ / t s' i u wine-master;
 288. *kiōg / kĩau- / k i a o proud, arrogant: 289. *g'iõg / g'iaũ / k' i a o high;
 290. *tjōg / t̃iaũ / ch a o morning: same char. *d'jōg / d'iaũ / ch' a o (morning ceremony:) audience;
 291. *tsiōg / ts̃iaũ / t s i a o to roast, burn: 292. *dz'iõg / dz'iaũ / t s' i a o firewood;
 293. *kiung / kiwong- / k u n g to join the hands: same char. *g'jung / g'iwong- / k u n g together, all;
 294. *kiōg / kĩau- / k i a o well-sweep: same char. *g'iõg / g'iaũ / k' i a o cross-bar;
 Further the following numbers below: 295:296; 334:335; 345:346; 357; 358:359; 468; 475:476.

The examples are surprisingly numerous, and many of them are so striking that there can be no doubt that the early literary men clearly felt the affinity between the members of each word pair and that they therefore expressed it in the script they created. They must have had quite as real a feeling for the affinity between 分 *piwən 'to divide' and (same char.) *b'iwən 'a share' as an ordinary Englishman has for the connection between 'to bind' and 'a bond', between 'clean' and 'to cleanse', between 'to lose' and 'lost'. The addition (mostly at a later date) of various radicals is indeed of no consequence and cannot invalidate our conclusion. The same conclusion may be drawn in regard to all the categories studied below.

B. Alternation of final tenuis and final media:

295. *kāt / k̃at / k o to cut: 296. *g'ād / yāi- / h a i to hurt, damage;
 297. *sāt / s̃at / sh a to kill: same char. *sād / s̃ai- / sh a i to diminish, reduce;
 298. *k'iat / k'iet / k' i e to cut: 299. *k'iad / k'iei- / k' i script notches;
 300. *siwat / siwāt / sh u o to speak: same char. siwad / siwāi- / sh u e i to exhort;
 301. *piwāt / piwāt / f a to throw out, send forth: 302. *piwāt / piwāi- / f e i cast aside;
 303. *kiet / kiet / k i e to tie, knot: 304. *kied / kiei- / k i hair-knot;

234 諾 235 警 236 疵 237 漸 238 檢 239 儉 240 夾 241 狹 242 挾 243 挾 244 閣 245 合 246 長 247 伯
 248 白 249 踏 250 井 251 奔 252 丙 253 病 254 解 255 辟 256 脊 257 瘡 258 卑 259 庠 260 同 同
 261 洞 262 女 商 263 敵 264 帝 265 帝 266 隄 267 堤 268 曾 269 屠 270 載 271 背 272 期 273 子 274 字
 275 戒 276 馬 戒 277 中 278 仲 279 降 280 包 281 抱 282 複 283 復 284 糾 285 斛 286 酒 287 酒 288
 驕 289 喬 290 朝 291 焦 292 樵 293 共 294 橋 295 割 296 害 297 殺 298 鋏 299 契 300 說 301 發 302

305. **l'iwat* / *ts'iuət* / ch' u to go out, bring out: same char. **l'iwəd* / *ts'wi-* / ch' u e i to bring out, take out;
 306. **sl'iwət* / *š'iuət* / shu ai to lead: same char. **sl'iwəd* / *š'wi-* / shu ai leader;
 307. **l'iap* / *ts'iap* / ch' i to seize, grasp: 308. **l'iab* / *ts'i-* / ch' i bird of prey, to seize a prey;
 309. **d'āk* / *d'āk* / t o to measure: same char. **d'ág* / *d'uo-* / t u a measure;
 310. **āk* / *āk* / o bad: same char. **ág* / *'uo-* / w u (to find bad:) to detest, hate;
 311. **χāk* / *χpk* / h o to scare: same char. **χǎg* / *χa-* / h i a to scare;
 312. **d'ǎk* / *dž'ǎk* / sh' i to shoot: same char. **d'ǎg* / *dž'ia-* / sh' ê to shoot;
 313. **ēk* / *'ek* / o a defile, a pass: same char. **ēg* / *'ai-* / y a i a defile, a pass;
 314. **tsēk* / *tsek* / ts' ê to demand payment, to exact: same char. **tsēg* / *tsai-* / ch' a i debt;
 315. **d'ǐk* / *ǐk* / y i to change: same char. **d'ǐg* / *i-* / y i (changeable:) easy;
 316. **tsǐk* / *tsǐk* / tsi collect, accumulate: same char. **tsǐg* / *tsi-* / tsi to put in stack, stack, hoard;
 317. **g'wēk* / *γwek* / h u o to delineate: same char. **g'wēg* / *γwai-* / h u a to draw, a design;
 318. **sək* / *sək* / s' ê to block, a pass: same char. **səg* / *sai-* / s a i frontier pass;
 319. **ǐək* / *ǐək* / y i to keep in mind, remember: 320. **ǐg* / *'i-* / y i to think;
 321. **pǐūk* / *pǐuk* / f u happiness, blessing: 322. **pǐūg* / *pǐu-* / f u rich, wealth;
 323. **b'ǐūk* / *b'ǐuk* / f u to lie prostrate: same char. **b'ǐūg* / *b'ǐu-* / f u to hatch;
 324. **kōk* / *kuk* / k u to announce: same char. **kōg* / *kau-* / k a o to announce;
 325. **l'ǐōk* / *l'ǐuk* / ch u to pray, prayer-master: same char. **l'ǐōg* / *l'ǐu-* / ch' o u to curse;
 326. **sǐōk* / *sǐuk* / s u to lodge the night: same char. **sǐōg* / *sǐu-* / si u (the sun's lodging-stations:) mansions, groups of constellations, parts of the zodiac;
 327. **b'ǐōk* / *b'ǐuk* / f u return, repeat, recommence: same char. **b'ǐōg* / *b'ǐu-* / f u repeatedly, again;
 328. **kōk* / *kǎk* / k ü e to awake: same char. **kōg* / *kau-* / k i a o to awake;
 329. **g'ōk* / *γǎk* / h ü e to learn: 330. **g'ōg* / *γau-* / h i a o to teach;
 331. **ǐōk* / *ǐək* / y ü e to bind, restrain: same char. **ǐog* / *'ǐau-* / y a o bond, contract;
 332. **tsǐōk* / *tsǐək* / ts' ü e torch: same char. **tsǐog* / *tsǐau-* / ts' i a o to burn;
 333. **d'ōk* / *d'ǎk* / ch o to wash: same char. **d'ōg* / *d'au-* / ch' a o to wash clothes.
 Further 341:342; 352:353; 401:402; 414:415; 418:419; 428:429; 459:460; 478:479; 484; 486:487; 492.

C. Alternation of the vowels *ǎ* : *a* : *ǎ*.

334. **ka* / *ka* / k i a good, excellent: 335. **g'ǎ* / *γǎ-* / h o congratulate;
 336. **án* / *án* / a n peace, peaceful, tranquil: 337. **an* / *'an-* / y e n peace, peaceful;
 338. **ngǎn* / *ngǐvn* / y e n to speak: 339. **ngǐan* / *ngǐǎn-* / y e n to condole;
 340. **kván* / *kuǎn-* / k u a n to pass a string through, string together, bound together, intimate with: same char. **kwan* / *kwan-* / k u a n intimate with, familiar with;
 341. **kát* / *kát* / k o to cut: 342. **kad* / *kai-* / k i e to castrate;
 343. **klam* / *kam* / k i e n to see, inspect: 344. **glám* / *lám:* / l a n to see;
 345. **tsǎm* / *tsǎm:* / ch a n to cut off: 346. **dz'ám* / *dz'ám* / ch a n *Abschnitt*, a short while;
 347. **g'ǎng* / *γvng* / h i n g to walk, go, street: same char. **g'áng* / *γáng* / h a n g row of marching men;
 348. **klǐǎng* / *kǐvng:* / k i n g bright: 349. **glǐang* / *lǐang-* / l i a n g enlighten;

350. *g'wǎk / ɣwǎk / h u o to catch, get: 351. *g'wǎk / ɣwǎk / h u o to reap;
 352. *ag / 'a- / y a inferior, second: 353. *ák / 'ák / o bad.
 Further: 357; 358:359; 360; 361:362; 370:371; 372:373; 414:415; 422:423; 426:427; 428:
 429; 434:435; 466:467; 504:505; 514:515.

D. Alternation of forms with and without medial i:

354. *ngu / nɣu: / o u match, vis-a-vis: 355. *ngiu / ngiu- / y ü to meet;
 356. *ts'u / ts'ɣu: / ts' o u to cause to run: same char. *ts'iu / ts'iu- / ts' ü to run,
 hasten to;
 357. *kán / kǎn / k a n dry (warmed in the sun): same char. *g'ian / g'ǎn / k' ien
 heaven (sunny);
 358. *d'wán / d'uǎn / t' u a n round: 359 *tiwan / tiwǎn: / c h u a n to turn round;
 360. *mwán / muǎn- / m a n (drawn out:) distant, unlimited: same char. *miwǎn /
 miwǎn- / w a n extended, long;
 361. *ngǎd / ngǎi- / a i (cut off:) end, to end: 362. *ngǎd / ngǎi- / y i (to cut:) to
 mow;
 363. *lwǎn / luǎn / l u n to assort, select: 364. *liwǎn / liwǎn / l u n class, category;
 365. *tswat / tsuǎt / t s u (moriturus:) soldier: same char. *tsiwǎt / tsiwǎt / t s u to die;
 366. *nǎp / nǎp / n a to bring in: 367. *niǎp / niǎp / j u to enter;
 368. *dz'ǎp / dz'ǎp / t s a brought together, mixed: 369. *dz'ǎp / dz'ǎp / t s i to come
 together, assemble;
 370. *ngǎng / ngǎng / a n g high, to lift high: 371. *ngǎng / ngǎng: / y a n g to lift
 the face;
 372. *nák / nǎk / n o to agree, say yes: 373. *niǎk / niǎk / j o to agree, conform to,
 like;
 374. *sǎng / sǎng / s h e n g to bear, be born, live: 375. *siǎng / siǎng- / s i n g innate
 nature, life.
 Further: 391:392; 407:408; 422:423; 424:425; 426:427; 428:429; 434:435; 438:439; 452:453;
 512:513; 514:515; 535:536; 540:541.

E. Alternation of voiceless aspirate and voiced aspirate as initial:

376. *ts'iu / ts'iu: / ts' ü to take: 377. *dz'iu / dz'iu- / ts ü to bring together, collect;
 378. *ts'ian / ts'ian: / ts' i e n shallow: 379. *dz'ian / dz'ian: / t s i e n thin, shallow;
 380. *k'iwǎn / k'iwǎn / k' ü a n to bend, curved: 381. *g'iwǎn / g'iwǎn / k' ü a n (roll-
 ed hand:) fist;
 382. *ts'iwǎn / ts'iwǎn / ts' ü a n healed, restored: 383. dz'iwǎn / dz'iwǎn / ts' ü a n
 complete, whole;

廢303.結304.誓305.出306.帛307.執308.驚309.度310.惡311.嚇312.射313.阮314.責315.易316.
 積317.盡318.塞319.憶320.意321.福322.富323.伏324.告325.祝326.宿327.復復328.覺329.學
 330.數331.約332.燠333.濯334.嘉335.賀336.安337.晏338.言339.唁340.貫341.割342.轄343.監
 344.覽345.斬346.暫347.行348.景349.亮350.獲獲351.獲352.亞353.惡354.偶355.遇356.
 趣357.乾358.團359.轉360.曼361.艾362.刈刈363.掄364.倫365.卒366.內367.入368.雜
 369.集370.仰仰371.仰372.諾373.若374.生375.性376.取377.聚378.澆379.儗380.巷381.

384. **p'wân* / *p'uân*- / p' a n to cleave, divide, separate: 385. **b'wân* / *b'uân*- / p a n to separate, dividing bank between fields;
 386. **t'ád* / *t'ái*- / t' a i great: 387. **d'ád* / *d'ái*- / t a great;
 388. **k'ien* / *k'ien* / k' i e n to pull: 389. **g'ien* / *gien* / h i e n (the thing that is pulled:) bow string;
 390. **p'iwâm* / *p'iwvm*- / f a n to overflow, inundate: same char. **b'iwâm* / *b'iwvm*- / f a n to flow out, disperse;
 391. **k'wat* / *k'uat* / k' u cave, hole: 392. **g'iwat* / *g'iuat* / k ü to excavate, dig a hole;
 393. **t'iar* / *t'iei* / t' i (sequence of steps:) staircase: 394. **d'iar* / *d'iei*- / t i sequel, sequence, order;
 395. **ts'iar* / *ts'iei* / t s' i (the counterpart, of equal standing:) consort, principal wife: 396. (the Arch. graph of which had the same upper part as 395) **dz'iar* / *dz'iei* / t s' i equal, uniform;
 397. **p'ïók* / *p'ïuk* / f u to turn round: 398. **b'ïók* / *b'ïuk* / f u to return;
 399. **t'ïóg* / *t'ïgu* / ch' o u take out, pull out: 400. **d'ïóg* / *d'ïgu*- / ch o u (the outcome:) descendants;
 401. **t'ïog* / *t'ieu*- / t' i a o to sell grain: 402. **d'ïok* / *d'iek* / t i to buy grain;
 403. **p'ïung* / *p'ïwong*- / f eng to hold with both hands: 404. **b'ïung* / *b'ïwong*- / f eng to hold with both hands.

F. Alternation of tenuis and voiceless aspirate as initial:

405. **puá* / *puá*- / p o to walk lame: 406. **p'wá* / *p'uá* / p' o slanting, oblique, partial;
 407. **k'io* / *k'iuo* / k ü chariot, carriage: 408. **k'o* / *k'uo*- / k' u storehouse for chariots, arsenal;
 409. **puân* / *puân*- / p a n half: 410. **p'wân* / *p'uân*- / p' a n to cleave;
 411. **kiwan* / *kiwän*- / k ü a n to roll: same char. **k'iwän* / *k'iwän* / k' ü a n crooked, rolled up;
 412. **kiwat* / *kiwet* / k ü e to cut off: 413. **k'iwat* / *k'iwet* / k' ü e to break, splinter, defective;
 414. **k'ïäp* / *k'ïvp* / k i e (to take away:) to rob, plunder: 415. **k'ïab* / *k'ïwo*- / k' ü to go away, take away;
 416. **kwáng* / *kwáng*- / k u a n g wide: 417. **k'wáng* / *k'wáng*- / k' u a n g (the wide parts:) the wilds;
 418. **pák* / *pák* / p o wide, ample: 419. **p'ág* / *p'uo*- / p' u great, vast;
 420. **k'ïüng* / *k'ïung* / k u n g bow: 421. **k'ïüng* / *k'ïung* / k' i u n g vaulted, vault.

G. Alternation of media and voiced aspirate as initial:

422. **d'ian* / *ïän* / y e n extend, stretch out: 423. **d'án* / *d'án*- / t a n extend, make great;
 424. **giwan* / *jiwän* / y ü a n round: 425. **g'wan* / *γwan* / h u a n ring;
 426. **giwän* / *jiwvn* / y ü a n dragging slowly: 427. **g'wän* / *γwän*- / h u a n slow, slack, remiss;
 429. **d'iwat* / *iwät* / y ü e glad, rejoice: 428. **d'wád* / *d'uái*- / t u e i merry;
 430. **d'ïên* / *ïên*- / y i n to pull, lead: 431. **d'ïên* / *d'ïên*- / c h e n rope by which cattle are led;
 432. **d'ïor* / *zi*- / s h i to see: 433. **d'ïor* / *dz'ï*- / s h i (to cause to see:) to show, sign, signalize;
 434. **d'iam* / *ïäm* / y e n to blaze: 435. **d'ám* / *d'ám* / t' a n aflame;

436. **d̥iôg* / *i̯u* / y u to come out from, from: 437. **d̥iôg* / *d̥i̯u-* / c h o u (outcome:) descendants;

H. Alternation of media and tenuis as initial:

438. **giwak* / *jiwak* / y ü territory, state: 439. **kwak* / *kwak* / k u o state;
 440. **d̥iok* / *ziak* / s h a o a ladle: 441. **liok* / *tsiak* / c h o to ladle;
 442. **d̥iog*, *d̥iog* / *ziäu-*, *d̥iäu-* / s h a o, c h a o to summon: 443. *liog* / *tsiäu* / c h a o to summon;
 444. **d̥iuk* / *ziwok* / s h u to be attached to, belong to: same char. **liuk* / *tsiwok* / c h u to attach.

I. Alternation of media and voiceless aspirate as initial:

445. **gian* / *iän* / y e n to flow out, overflow, go to excess: 446. **k'ian* / *k'iän* / k' i e n exceed, excess, fault;
 447. **dian* / *iän* / y e n extend, stretch out: 448. **t'ian* / *t'iän* / c h' a n long (sc. beams);
 449. **d̥iôg* / *i̯u* / y u to come out from, from: 450. *t'ióg* / *t'i̯u* / c h' o u to take out, pull out.

K. Alternation of o and ă as principal vowel:

451. **ko* / *kuo* / k u merchant: same char. **kă* / *ka-* / k i a price;
 452. **ngio* / *ngiwo* / y ü to withstand, a match, opponent: 453. **ngă* / *nga-* / y a to meet;
 454. **nglôk* / *ngăk* / y ü e music: same char. **glăk* / *lăk* / l o joy, rejoice.
 Further: 512:513.

L. Alternation of ə and ε as principal vowel:

457. **g'əp* / *γăp* / h o to join, combine, collect: 458. **g'εp* / *γăp* / h i a sacrifice to ancestors unitedly, collectively;
 455. **k'əm* / *k'âm* / k' a n pit: 456. **g'em* / *γăm-* / h i e n to fall into a pit.
 Further: 461:462; 463:464;

M. Alternation of forms with and without medial i:

459. **kwad* / *kwai-* / k u a i to divide: 460. **kiwat* / *kiwet* / k ü e to cut off;

拳382痊383全384判385畔386大太387大388牽389弦390汜391窟392掘393梯
 394第395妻396齊397覆398復399抽400冑401糴402糴403捧404牽405跟
 406頗407車408庫409半410判411巷412決413缺414劫415去416廣417曠418博
 419專420弓421穹422延423誕424團425環426爰427緩428兌429悅430引
 431糾432視433示434災435災436由437胃438域439國440勺杓441勺酌442
 召443招444屬445衍446愆447延448榼449由450抽451賈452禦453御454樂

461. *dz'iar / dz'iei / ts' i equal, uniform: 462. *dz'er / dz'ăi / ch' ai equals, class;
 463. *s'iar / siei: / si to wash: same char. *ser / s'ăi / sh ai to sprinkle, cleanse;
 464. *d'am / d'âm / t' a n extend, spread: 465. *d'iam / d'iem: / tien (a *spread:) a mat;
 466. *kăp / kăp / k i a to press between, pinchers: 467. *kiap / kiep / kie (pinchers:) chopsticks.
 Further: 495; 504:505.

N. Alternation of forms with medial *ɿ* and medial *i*:

468. *dz'iar / dz'iei / ts' i equal, uniform, even: same char. *ts'iar / tsi- / ts i hemmed (even) lower edge of garment;
 469. *kiêng / kiäng: / king neck: 470. *kieng / kieng: / king to cut the neck;
 471. *t'êng / t'äng- / ch eng straight, correct, regulate: 472. *d'ien / d'ien- / ting (to put straight:) to fix, settle;
 473. *n'ieg / n'ei / er child: 474. *ngieg / ngiei / ni young and weak;
 475. *piêng / piäng- / ping combine two, both: 476. *b'ien / b'ien: / ping side by side;
 477. *b'îêng / b'îäng / p' i n g to screen off, remove: same char. *b'ien / b'ien: / ping a screen;
 478. *s'ieg / sie- / si to give: 479. *sie / sie / si to give;
 480. *k'iwêg / k'iwig: / k' u ei a stride, distance covered by moving one leg: 481. *k'iweg / k'iwai / k' u ei crotch of a man's legs.
 Further: 493:494.

O. Alternation of forms with and without medial *w*:

482. *n'iat / n'iat / j ê hot: 483. *n'iwat / n'iwat / j o to burn;
 484. *nəp / n'ap / n a to bring in: same char. *nəwəb / nuqi- / n ei the interior;
 485. *g'äng / gwng / h eng crosspiece, crosswise: same char. *g'wäng / gwng / h ung to plow crosswise;
 486. *pak / pak / pei (the back side:) north: 487. *pwəg / puqi- / pei the back, posterior part.
 Further: 520:521.

In the following groups we find an interchange between dentals and palatals (*t* : *ɿ* etc.) and between dentals and supradentals (*ts'* : *tɕ'*).

P, a. Alternation of dental and palatal tenuis as initial:

488. *t'iat / t'iat / ch ê (breaking through:) penetrating, perspicacious: 489. *t'iat / t'iat / ch ê to break, decide;
 490. *t'ied / t'i- / ch i (to cause to come:) to convey, transmit, bring about: 491. *t'ied / t'ie- / ch i to come;
 492. *t'iad / t'i- / ch i a pledge, a security given, a hostage: same char. *t'iat / t'iet / ch i substance, substantial matter;
 493. *tiok / tiek / ti bright, brilliant: 494. *t'io / t'iak / ch o to burn, brilliant;

P, b. Alternation of dental and supradental affricate as initial:

495. ts'a / ts'a / ch' a to diverge, discrepancy: same char. *ts'ia / ts'ie / ts' i of different length;

496. *ts'ien / ts'ien / ts'in near, close: 497. ts'ien / ts'ien- / ch'en inner coffin (nearest to the body);
 498. *dz'iep / dz'iep / tsi to bring together, hold together: 499. tsiep / tsiep / chi to collect;

Q. Alternation between palatal tenuis and dental media aspirata as initial (cf. A above):

500. *t'io / t'io / ch u many all: 501. *d'io / d'io / ch'u to collect;
 502. *t'io / t'io / ch o u circle, cycle, all round: 503. *d'io / d'io / ch'o u to bind round, wrap round.

R. Alternation of dental tenuis and palatal voiceless aspirate as initial (cf. F above):

504. *ta / ta / t o much, many: 505. *t'ia / t'ia / ch'i large, extravagant.

S. Alternation of palatal media and dental media aspirata (cf. G above):

506. *tiag / ti- / shi to wait upon: 待 *d'ag / d'ag / tai to wait;

T. Alternation of dental media and palatal tenuis, or vice versa, as initial (cf. H. above):

507. *tiok / iuk / y ü to nourish: same char. *t'io / t'io / ch u rice gruel;
 508. *tiu / iu / sh u to kill: 509. *tiu / iu / ch u to punish, to kill;
 510. *tiu / iu / sh u place, position: 511. *tiu / iu / ch u place, position.

U. Alternation of palatal media and dental voiceless aspirata as initial (cf. I above):

512. *tiä / tia / shê Spirit of the Soil: 513. *t'o / t'uo / t'u earth soil.

To sum up, the alternations Q, R, S, T, U are additional examples of the same kinds of stem variation as those we studied under A, F, G, H, I above.

V. Alternation of nasal and tenuis as final consonant:

514. *kan / kan / kan knock against, attack: 515. *kiat / kiät / kie to accuse;
 516. *gliang / liang- / liang to rob: same char. *gliak / liak / lue to rob;

455 垠 456 陷 457 合 458 給 459 决 460 决 461 齊 462 濟 463 洒 464 覃 465 簞 466 夾 467 挾 468 齊 469 頸 470 頸 471 正 472 定 473 兒 474 倪 475 片 476 併 477 屏 478 賜 479 錫 480 銑 481 奎 482 熬 483 藪 484 內 485 衡 486 北 487 背 488 哲 489 折 490 致 491 至 492 質 493 的 494 灼 495 差 496 親 497 親 498 輯 499 載 500 諸 501 儲 502 周 503 網 504 多 505 侈 506 侍 507 鬻 508 殊 509 誅 510 署 511 著 512 社 513 土 514 土 515 許 516 掠 517 廣 518 據 519

517. *kwáng / kwáng: / k u a n g wide: 518. *k'wák / k'wák / k' u o to widen, enlarge;
 519. *mieng / mieng / m i n g dark, darkness: same char. *miek / miek / m i to cover;
 520. *piām / piām: / p i e n to diminish: 521. *piwǎp / piwǎp / f a to lack, exhaust;
 522. *ts'am / ts'ām: / t s ' a n to hold in the mouth: same char. *tsap / tsǎp / t s a to bite.

X. Alternation of *n* and *r* as final consonant:

523. *b'ien / b'ien: / p ' i n female: same char. *b'ier / b'ji: / p i female;
 524. *sien / sien: / s i e n to wash: same char. *sier / siei: / s i to wash;
 525. *xiwǎn / xiwǎn: / h ũ a n to sun, to dry in the sun: same char. *xiwǎr / xiwiē: / h u e i sunlight;
 526. *nân / nân- / n a n difficulty, disaster: same char. *nâr / nâ / n o to expel malign influences.

So far the fairly rational and regular alternations. Besides those, we find a number of more curious cases which should not be passed in silence. A few examples will illustrate this:

527. *gwia / jwiē / w e i to make: 528. *ngwia / ngjwiē- / w e i to fake, spurious;
 529. *k'io / k'iuo / k' ũ ruins, waste: same char. *xio / xiuo / h ũ empty;
 530. *xmāk / xāk / h e i black: 531. *māk / māk / m o black, ink;
 532. *pliām / piām: / p i n g rations: 533. *bliām / liām: / l i n granary;
 534. *ts'am / ts'ām / t s ' a n three, triad: same char. *šiām / šiām / s h e n (the triad star:) Orion;
 535. *g'ap / γāp / h o to join, unite: 536. *xiap / xiap / h i united, harmonious;
 537. *d'iak, d'ǎg / dz'iak, dz'ia- / s h ī, s h ē to shoot: 538. *dziǎg / zia- / s i e archery hall;
 539. *d'iak / dz'iak / s h ī to eat: same char. *dziag / zi- / s ī food;
 540. *tiōg / tsiu: / c h o u broom: 541. *sōg / sǎu: / s a o to sweep;
 542. *siōg / siǎu: / s i a o small: 543. *siōg / siǎu: / s h a o few, a little;
 544. *tsōg / tsǎu: / t s a o flea: 545. *sōg / sǎu / s a o to scratch;
 546. *šiāk / šiāk / s h ī to know: same char. *tiōg / tsi- / c h ī to remember, to record.

The conclusion to be drawn from the series of examples adduced above is clear: the early script masters had a surprisingly good idea of which variants in sound constituted natural alternations within one word-stem: they realized that a *tân* and a *d'ân* could be «one and the same word» varied within clearly defined limits, and they expressed this knowledge in their choice of graphs. This evidence, furnished by the very Archaic Chinese scholars who lived in the early Chou era, offers strong support to our conclusion that the stem variations studied under A—X above (of which Q—U are mere corollaries to A and F—I) may be considered safely attested alternations in the Archaic Chinese language.

冥 520 𣎵 521 乏 522 𣎵 523 𣎵 524 洗 525 𣎵 526 難 527 爲 528 爲 529 虛 530 𣎵 531 臺 532 臺 533 康 534 參 535 合 536 翁 537 射 538 榭 539 食 540 帚 541 掃 542 小 543 少 544 蚤 545 蚤 546 識

SOME RECENT DEVELOPMENTS IN CHINESE TEXTILE STUDIES

BY

PAULINE SIMMONS

During the 1920's, a good deal of interest in early Chinese textiles was engendered in Far Eastern circles by the published accounts in *Serindia* and *Innermost Asia* of Sir Aurel Stein's textile finds at Lou-lan and Tun-huang, and by Professor W. P. Yetts' brief account, in *The Burlington Magazine*,¹⁾ of the Chinese silks found by Colonel P. K. Kozlov at Noin-ula, in northern Mongolia. Subsequent discoveries and publications, some of them of the utmost importance to Chinese art history, have not, however, attracted much attention among specialists in Chinese art. The textile experts who took over in the 30's and 40's struggled valiantly with the new archaeological material that was discovered in the West and on the Asiatic mainland, as well as with hitherto unpublished textiles of later date. Despite the fact that they had had little if any previous first-hand experience with Chinese weaving techniques or knowledge of Chinese stylistic repertoires, several of these textile specialists came up with extremely valuable contributions to Chinese textile studies. The importance of their work has not, however, been recognized by Far Eastern scholars generally, nor have unwarranted attacks on some of their publications been subjected to the close scrutiny they deserve.

A proper evaluation of all the publications that have appeared during the past quarter of a century cannot be undertaken at this time, but a brief discussion of some of the broad implications of Chinese textile history, and of specific problems that have been posed by recent developments will, I hope, underscore the need for more active participation by Far Eastern scholars in this area of investigation.

The bits and pieces of evidence, both tactile and documentary, pertaining to the history of silk weaving in China now add up to an impressive total, but the amount of the evidence is by no means the most distinguishing feature of this record. It represents, in fact, a unique chapter in Chinese art history. For, unlike the many other early art forms of China that have been brought to light during the past century, which almost without exception have been found within or near the confines of the ancient Chinese world, the silks have turned up in spots as remote from China proper and from each other as Japan, Korea, northern Mongolia, Siberia, Chinese

¹⁾ Vol. XLVIII, April, 1926, pp. 168 — 185.

Turkestan, Persia, Syria, Egypt and various countries of Europe.¹⁾ Except for a few silk remains on Shang bronzes and a group of pre-Han textiles excavated recently at Ch'ang-sha, in Hunan,²⁾ no important early textile finds in China proper have as yet been reported, and almost none of the later textiles which have come from

¹⁾ The principal archaeological discoveries indicated here are:

- (a) 6th to 5th century B. C. finds at Pazyryk, in Siberia. Published by S. I. Rudenko in *Kul'tura Naseleniya Gornogo Altaya V Skisjskoe Vremya* (The Culture of the Populations of the Altai Mountains in the Scythian Period), Leningrad, 1953.
- (b) Han and T'ang finds of Sir Aurel Stein at Lou-lan, Astana, Tun-huang and other sites near these early outposts of the Chinese Empire. Published by Stein in *Serindia*, 1921, and *Innermost Asia*, 1928, and by F. H. Andrews in *The Burlington Magazine*, vol. XXXVII, July, August, September, 1920.
- (c) Han silks found at Noin-ula, in Mongolia by P. K. Kozlov. Published by W. P. Yetts in *The Burlington Magazine*, vol. XLVII, April, 1926; by Camilla Trever in *Excavations in Northern Mongolia*, 1932; and by A. A. Voskresensky and N. P. Tikhonov in *Izvestia*, vol. XI, pts. 7-9, 1932 (translated in part by Eugenia Tolmachoff for *The Bulletin of the Needle and Bobbin Club*, vol. 20, 1936.)
- (d) Han silks found at Palmyra, in Syria. Published by R. Pfister in *Textiles de Palmyre*, 1934, and *Textiles de Palmyre III*, 1940; by Otto Maenchen-Helfen in *The Art Bulletin*, vol. XXV, December, 1943; and by R. J. Charleston in *Oriental Art*, vol. 1, Summer, 1948.
- (e) Han and post-Han silks found at Edsen-gol and Lop-nor by Sven Hedin and Folke Bergman. Published by Vivi Sylwan in *Investigation of Silk from Edsen-gol and Lop-nor*, 1949.
- (f) T'ang silks found in the Turfan area by A. von Le Coq; published by von Le Coq in *Chotscho*, 1913.
- (g) A few Sung (11th or 12th century) fragments found at Rayy, in Persia. No publications noted.
- (h) Yüan textiles found in Egypt. Published by A. F. Kendrick in *Catalogue of Muhammadan Textiles of the Mediaeval Period*, 1924, and by A. D. Howell Smith in *Brief Guide to Chinese Woven Fabrics*, Victoria and Albert Museum, 1925.

The most notable aggregations of Chinese export textiles preserved in state and church treasuries of foreign countries are:

- (a) T'ang and pre-T'ang silks in the Shosoin and Horyuji treasuries in Japan. Published in *Gomotsu Jodai Senshokumon* (Textile Fabrics of the Sixth, Seventh, and Eighth Centuries A. D. in the Imperial Household Collection), 1929, with introductory text and catalogue notes by Jiro Harada and Kiyoshi Inouye; and in *Toyei Shuko* (Illustrated Catalogue of the . . . Shosoin), especially in the third edition which came out between 1929 and 1943.
- (b) Yüan and later textiles preserved in European museums and church treasuries. Published by Otto von Falke in *Kunstgeschichte der Seidenweberei*, 1913, and in *Decorative Silks*, 1922; and by Agnes Geijer in *Oriental Textiles in Sweden*, 1951.

(Note: The publications listed above represent only the chief primary sources of information about the textiles, many of which have been discussed in other works.)

²⁾ The silk remains on Shang bronzes have been described and illustrated by Vivi Sylwan in *Investigation of Silk from Edsen-gol and Lop-nor*.

Several extremely interesting silks found at Ch'ang-sha which are believed to be at least as early as the 4th century B. C. have been acquired by the Cooper Union Museum in New York. These have not yet been published. A few other textiles which have been found at this site are the property of the Peking Government. These were noted and illustrated in a catalogue of an exhibition of Ch'ang-sha finds (*Exhibition of Chu Culture*), but neither the descriptions nor the illustrations are very useful for study purposes.

China are accompanied by any accurate dating evidence. The silks found at the widely scattered points noted above, therefore, which were all export textiles associated in one way or another with China's commercial and diplomatic contacts with the outside world, constitute the main body of evidence for the reconstruction of Chinese textile history between the 8th or 5th century B. C. and the 18th century. Whether archaeological remains or silks preserved in the church and state treasuries of foreign countries, virtually all of the material can be dated fairly accurately. There are, of course, serious gaps in this loosely-linked chain of evidence, some of the most troublesome periods being the Six Dynasties, Sui, and Sung dynasties, for which there is almost no tactile evidence or reliable dating information. Future archaeological discoveries within the borders of China will in all likelihood help to clear up the confusion that presently exists in regard to these periods, all of which, there is reason to believe, witnessed important stylistic and technical developments in textile production.¹⁾

In terms of possible stylistic and technical influence abroad, the implications of the widespread and long-continued dispersal of the Chinese export silks stagger the imagination. Insofar as it relates to early, i. e., pre-T'ang, influence in the West, the subject is a thorny one which only a few scholars have been willing to tangle with. Up to the present, the issue has not been resolved satisfactorily, owing to the lack of unassailable evidence, but some inspired theorizing about it has been recorded during the past half century. One recently discovered clue which lends substance to earlier theories has not, however, received the attention it merits from Far-Eastern scholars, in spite of the fact that it figured in the most heated East-versus-West exchange of the century. This new evidence is, I believe, significant enough to warrant a brief review of recorded opinion about the possibility — or probability — of pre-T'ang influence from China in the weaving centres of the West.²⁾

The earliest and by all odds the most important technical influence which it can be assumed came to the West from China was the principle of the drawloom. Exactly when western craftsmen mastered this principle, which enabled the weaver to create repeat patterns perfectly and indefinitely by mechanical means, is, however, a matter of conjecture. The Han silks that reached the Roman Empire between the 1st century B. C. and the 3rd century A. D. are known to have created a tremendous stir, not only because of their silken elegance but also because of their lavish lengths of allover patterning. There is little reason to doubt that these Chinese silks inspired experimentation in the West that resulted in some kind of

¹⁾ See J. F. Flanagan, The Origin of the Drawloom Used in the Making of Early Byzantine Silks, in *The Burlington Magazine*, Vol. XXXV, No. CXCVI—CCI, July—December, 1919, pp. 167—172; Nancy Andrews Reath and Eleanor B. Sachs, *Persian Textiles*, p. 13; R. Pfister, Le Rôle de l'Iran dans les Textiles d'Antinoé, in *Ars Islamica*, Vols. XIII—XIV, 1948, p. 67; and Adèle Coulin Weibel, *Two Thousand Years of Textiles*, p. 17.

²⁾ Although not directly affirmed, this theory is implicitly supported by G. Schaefer in his study, 'The Loom' which appeared in *Ciba Review*, No. 16, December 1938. See especially pp. 554—557.

mechanical device for effecting pattern repeats in weaving, because from the 3rd century A. D. on, Persia, Byzantium, Syria and Egypt began turning out fairly complex allover repeat patterns that would have been difficult if not impossible to weave entirely by the old hand method. Some textile experts have described these early western textiles as drawloom fabrics, and because they are all weft-patterned (the Han silks were warp-patterned), claim this new method of weaving as a technique that was evolved independently in one or another of the weaving centers of the West. Other textile specialists, however, are of the opinion that the drawloom was not perfected in the West before the late 13th century. These authorities incline to the belief that the earlier figured western weaves were made on relatively simple handlooms equipped with mechanical devices which assisted the weaver in repeating patterns but which did not control the repeats automatically as does the perfect drawloom. Dr. Geijer reports that looms of a similar type up to recent times were used in the Scandinavian countries. For the present, therefore, it is perhaps safest to regard the early repeat-patterned textiles of the West as having been woven on looms equipped with rudimentary features of the drawloom but without the automatic controls which would have enabled western weavers to emulate the lavish output of China.

None of the intricate Chinese weaves which it can be assumed were exported to the West during the Han period appear to have been mastered by western craftsmen, whose first repeat-patterned technique seems to have been the *twill*. Twill continued to be almost the only allover patterned weave in the West, or at least in Persia, until about the 10th century,¹⁾ and it has long been believed that it was from Persia that the twill technique was introduced into China some time during the Sasanian period. But, as Vivi Sylwan pointed out as early as 1937 in her study of silk remains on an Anyang bronze, and again in her 1949 discussion of Han silks found by Sven Hedin and Folke Bergman at Edsen-gol and Lop-nor,²⁾ the Chinese had for centuries been employing the «twill tie» in the pattern areas of their monochrome «damask» weaves. This evidence of a limited use of the twill technique has not, however, been accepted by most textile specialists as proof that the weave originated in China, but the recent discovery at Pazyryk of a Chinese polychrome figured silk which is woven throughout in a 1—3 twill technique³⁾ should, I believe, convince the most skeptical that the weave must have had a long history in China before it was displaced as a basic technique by the intricate compound cloth weave of Han. The Pazyryk silk, which has a design of rhomboidal and triangular motives comparable with some of the

¹⁾ Nancy Andrews Reath and Eleanor B. Sachs, *op. cit.*, p. 13.

²⁾ «Silk from the Yin Dynasty» in *The Bulletin of the Museum of Far Eastern Antiquities* (Stockholm), No. 9, 1937, pp. 122—125, and *Investigation of Silk from Edsen-gol and Lop-nor*, pp. 107—109.

³⁾ See S. I. Rudenko's publication of {the Pazyryk finds quoted above. The silk is illustrated on Pl. LXXVI, 1, and the description of the weave is on p. 248.

A number of fine woollen twills were also found at the Pazyryk site, but being unpatterned (except for the twill «diagonals»), it is impossible to determine where they originated.

Noin-ula textile patterns, may, in fact, prove to be one of the most important documents in the whole history of Chinese textiles, because if the brief technical analysis of its weave that appears in Rudenko's book is correct, the silk is not only a twill but is a *weft-patterned* weave as well. This passage (p. 248) was translated for the writer by Gerard Brett of the Royal Ontario Museum of Archaeology, Toronto. It reads as follows: »More complicated is a silk textile with a pattern, an example of which was found in Barrow 3. It was woven on a loom with one warp and two wefts. The relationship of the wefts is 1 — 1. The weave is a twill 1 — 3 and 3 — 1. The system of pattern weaving 1 — 3 and 3 — 1 in which this textile is woven is shown in fig. 153. The brownish weft no. 1 is woven together with the warp in a twill weave 1 — 3 and on the reverse side in a twill weave 3 — 1. The greenish weft no. 2 is woven in a twill weave 3 — 1 and on the reverse side 1 — 3. The change in the weaving is done in dependence on the changeover of the pattern and the ground. The pattern of this textile is shown on Pl. LXXVI, 1. The number of threads per square centimetre is 24 warps and 18 wefts.»

The Rudenko text does not, unfortunately, indicate whether this silk has a selvage, so that it does not seem safe to assume that the brown and green threads which are described as wefts actually are wefts, although they are represented as such in the drawing of the weave shown in fig. 153 (p. 249). If it can be demonstrated that these patterning threads are wefts, not warps, we have in this textile not only the earliest known example of Chinese weft twill, but also a direct prototype for the later weft twills of China and perhaps for those of the West as well. Barring this eventuality, the Pazyryk silk is still enormously important as proof that the twill weave was a basic technique in China as early as the 6th or 5th century B. C.

When we come to the question of stylistic influence which the early silk patterns of China might be supposed to have exerted in the West, we are, of course, faced with evidence that, except in rare instances, resists precise analysis. There is ample reason to suppose, nevertheless, that the patterns of the Han silks did affect the décor traditions of the West. More than half a century ago, Professor J. Strzygowski drew attention to the influence which the textiles of Iran and of the regions linked with it in cultural and political relations had exercised on the decorative arts of the Hellenistic East, and with prophetic insight, expressed the opinion that the ultimate source of some of the motives and décor schemes of these Iranian textiles was China.¹⁾ Strzygowski was especially interested in the lattice diaper patterns of some of the early Byzantine and Coptic silks attributed to the 4th to 7th centuries, which, because of their similarity to early Chinese bronze patterns, he suspected were derivatives of later (i. e., Han) silk patterns of China.

At the time Strzygowski propounded this theory, no Han silks had as yet been found either on the Asiatic mainland or in the West, and, as might be expected,

¹⁾ J. Strzygowski, *Seidenstoffe aus Aegypten im Kaiser Friedrich-Museum: Wechselwirkungen Zwischen China, Persien und Syrien in Spätantiker Zeit*, *Jahrbuch der K. Preussischen Kunstsammlungen*, XXIV (1903), pp. 147—178. Cf. especially pp. 173—178.

he was not taken very seriously by most of his colleagues. When the first Han silks were discovered at Lou-lan a few years later by Sir Aurel Stein, however, they were found to include a number of examples patterned with the kind of lattice all-over designs that Strzygowski had envisioned.¹⁾ Although he was obviously impressed with this evidence, Stein was unwilling to take a positive stand with regard to the Strzygowski theory chiefly because of objections raised by Otto von Falke and by the Byzantine scholar O. M. Dalton, but he made it quite clear that he considered the theory a tenable one if, at some future date, comparable examples of Han silk were found in the Hellenistic world.²⁾ In his speculations about possible Chinese influence in Sasanian Persia, Stein was more positive in his views. Although he remarked several characteristics of the Sasanian style which seemingly had no parallels in the Han textile repertory, notably the preference for hunting scenes, the practice of enclosing their animal motives in medallion borders decorated with discs, and the rigid treatment of all animals, he drew attention to the pairs of confronted animals which are frequently found in Han textile patterns and which are one of the most characteristic features of the Sasanian style, and also to the tree motive of Han silk and sculpture patterns, which turns up between the paired animals and hunters in many of the Sasanian patterns.³⁾ Stein was sufficiently impressed with the implications of this evidence to recommend that a close examination of the whole repertory of Sasanian textile patterns be made, which, he felt, «might well reveal other points of contact with Han patterns».

Had Stein been active when the late Han silks found at Palmyra, in Syria, were published in the 1930's,⁴⁾ there is little doubt that he would have accepted them as corroborative evidence of the soundness of the Strzygowski theory. He would also undoubtedly have reconsidered his tentative theory that the medallion-framed animal motive was necessarily an indigenous feature of the Sasanian style. The appearance of this motive in the pattern of one of the Palmyra silks (see fig. 1) is, in fact, the most impressive clue to the question of stylistic penetration in the West from Han China that has thus far been discovered. This aspect of the pattern was more or less lost sight of in the squabble over the correct provenance of the silks found at Palmyra, which turned into a *cause célèbre* during the 1930's and 40's, but it is too important to be passed over here without comment.

In order to understand fully the implications of the pattern in question, it is necessary to take cognizance of the conflicting views that were expressed about it and about all of the silk textiles found at this site. As noted above, the Palmyra silks were first published in 1934 by R. Pfister, the eminent French textile historian who had been entrusted with the study of all of the textiles found at this site, which included linen and woollen fabrics as well as silks. It was obvious to Pfister that the

¹⁾ Stein, *Innermost Asia*, vol. I, p. 243 and pl. XLIII, L. C. v. 027 a and b.

²⁾ *Ibid.*, pp. 243, 244.

³⁾ *Ibid.*, pp. 244, 245.

⁴⁾ R. Pfister, *Textiles de Palmyre*, 1934.

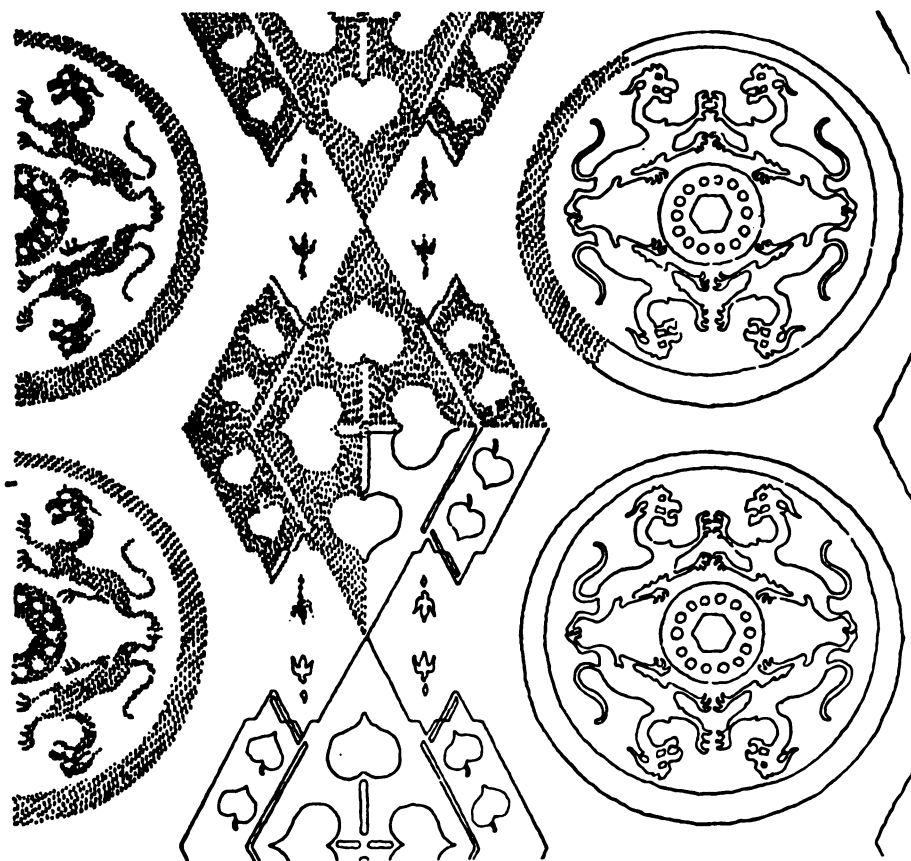


Fig. 1

silks stemmed from a very different source than the other textiles, and because of their stylistic and technical kinship with the Han silks found at Lou-lan and Noin-ula, he unhesitatingly ascribed them to China. In his carefully reasoned analysis of the patterns, Pfister drew parallels with material in the above-mentioned finds, and when he could discover no stylistic prototype for certain motives in the Han textile repertory, he looked for and found them in the early Han and pre-Han bronze patterns of China. Thus, in his study of the handsomest and best-preserved of the Palmyra silks, the S 9 example, a drawing of which is illustrated in fig. 1, Pfister associated the triple or «faulted» lozenge motive with well-known Han textile designs as well as with Han and pre-Han bronze patterns; the quatrefoil, used here in conjunction with the lozenges, with one of the most characteristic features of pre-Han mirror patterns; the pairs of symmetrically opposed animals enclosed in

medallion borders with pre-Han mirror patterns as well as with Han textile patterns in which the opposed animal motives were enclosed in lozenge or lattice frames; and the »pearl»-bordered annulets with early Han mirror and roof-tile designs.¹⁾ Although every detail of the S 9 pattern could be accounted for in this manner, the décor style in its entirety had no parallel in the Han textile repertory, and the roundel-enclosed animal motives quite obviously linked it with the so-called Sasanian style. But, as Pfister pointed out, this silk, woven in the characteristic warp-patterned damask technique of China, antedated any of the roundel-encircled animal silks attributed to Persia by no less than one and possibly as much as three centuries.²⁾ He did not go beyond a speculative paragraph or two about this aspect of the question but he made it quite clear that he believed it provided food for serious thought about the origin of the »Sasanian style».

That the subsequent attacks on Pfister's publication of the Palmyra silks as Chinese by two exponents of West Asiatic culture were motivated by their recognition of the stylistic implications of the S 9 pattern can scarcely be doubted. This issue was never openly acknowledged, however, as the *casus belli*. It was, in fact, so carefully evaded by Dr. Phyllis Ackerman in her discussion of the Palmyra silks which appeared in the *Survey of Persian Art*³⁾ that Pfister's work was not mentioned at all except indirectly in an ambiguously-worded footnote. Dr. Ackerman simply reclassified the S 9 damask as Parthian, and to round out this newly-created Parthian textile category, added several of the Lou-lan silks which had never heretofore been called anything but Chinese. These included two of the lattice-diapered textiles noted above (L. C. v. 027) and the handsome damask, L. C. vii. 09 illustrated here in fig. 2.⁴⁾ This re-writing of textile history was accomplished by omitting any discussion of technique and by substituting esoteric iconographical interpretations or carefully selective stylistic analyses of the patterns, which purported to relate them to East Parthian art, for the clear-cut visual prototypes that Pfister, Stein and others had noted in Chinese art. The rest of the Palmyra silks were passed over by Dr. Ackerman with a brief footnote comment that although they also might well belong to the Parthian family, she considered their designs to be »too 'neutral' to permit of definite decision». Since one of these supposedly »neutral» patterns (that of the S 10 textile)⁵⁾ is composed of such well-known Chinese motives as triple lozenges, »cash» motives, and monster masks, this conclusion can scarcely be regarded as an opinion worthy of consideration.

A more direct attack on Pfister's 1934 study of the Palmyra material was launched in 1939 by Mlle Th. Schmitter in an article published in *Revue Archéologique*.⁶⁾

¹⁾ *Ibid.*, p. 48.

²⁾ *Ibid.*, p. 49.

³⁾ »Textiles through the Sasanian Period», vol. I, pp. 681—715. See especially pp. 687—690.

⁴⁾ Stein, *op. cit.*, p. 238 and pl. XL.

⁵⁾ Pfister, *op. cit.*, p. 44, fig. 11.

⁶⁾ »Chine ou Proche-Orient?», Series 6, vol. 13 (1939), pp. 73—102.

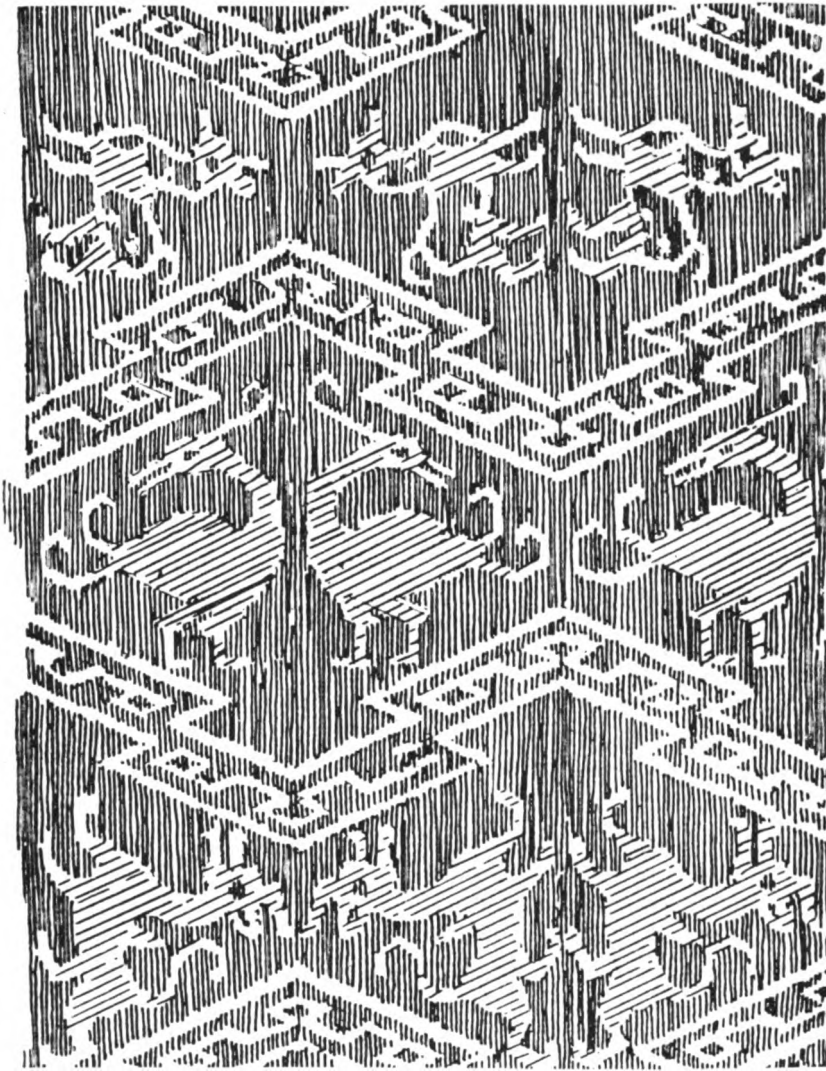


Fig. 2

Like Dr. Ackerman, Mlle Schmitter veered sharply away from China in her consideration of the Palmyra silks, but her theories of provenance, which were sometimes based on technical evidence, sometimes on stylistic, but rarely on both for the same piece, were less single-minded than Dr. Ackerman's. She related the pattern of the S 9 textile to Byzantine art, that of the S 10 monster-mask silk to Sasanian, and professed to see in the Lou-lan damask, illustrated here in fig. 2, which Dr. Ackerman had reclassified as Parthian, a similarity to certain mediaeval textiles containing

Arabic inscriptions.¹⁾ Perhaps the most extraordinary features of Mlle Schmitter's study were her dismissal of Pfister's identification of the Palmyra damasks as Chinese on the basis of their technical kinship with the above-mentioned Lou-lan damask with the dictum »L'armure Han est un mythe»,²⁾ and the tone of righteous indignation that pervaded all of her arguments.

The misuse of evidence employed in these attempts to establish a Near Eastern provenance for the Palmyra silks and for several of the Lou-lan textiles was fully exposed in Pfister's expanded study of the material which came out in 1940 under the title *Textiles de Palmyre III*. A little later, Pfister's views were ably defended by two scholars whose contributions in his behalf are of permanent value to Chinese textile studies. In an article which appeared in *The Art Bulletin*,³⁾ Otto Maenchen-Helfen solidly backed all of Pfister's stylistic analyses and provided additional evidence to support them, especially in regard to S 9 pattern. An even more telling blow to the opposition was dealt by R. J. Charleston in an article published in 1948 in *Oriental Art*.⁴⁾ Charleston concentrated on a study of the Lou-lan damask, L. C. vii. 09, which Dr. Ackerman had adopted as Parthian, and was able to establish its stylistic kinship with one of the Palmyra damasks, S 39 (our Pl. 1 a) which Pfister did not get around to publishing until 1940.⁵⁾ Although Pfister had related these two silks in his final volume and had reclaimed the Lou-lan damask as Chinese, it remained for Charleston to deliver the *coup de grace*. His study of the Lou-lan damask contains the most thorough iconographical analysis of the pattern that has ever been made of any early Chinese textile pattern, and in that it established beyond the shadow of a doubt the Chinese origin of this silk as well as of the S 39 Palmyra damask, it can be taken as proof that all of the Palmyra damasks are Chinese.

It has not been possible to set down here the complete story of the battle over the Palmyra textiles which, to be fully understood, must be followed through the various publications mentioned. One important factor in this historic exchange does not, however, show up clearly in the record. Although Pfister and his cohorts thoroughly discredited the efforts of the opposition to establish a Near Eastern provenance for the Palmyra and Lou-lan silks, they failed to stress some significant omissions in Dr. Ackerman's discussion of these textiles, and more important still, they somehow lost sight of the issue which had undoubtedly inspired the controversy, that is, the stylistic implications of the S 9 Palmyra pattern.

It should be noted that although Dr. Ackerman recognized the roundel-enclosed animal motives of the S 9 silk as »the antecedent of the most usual Sasanian textile composition»,⁶⁾ the lozenge motive in the pattern of this textile (and in that of the

¹⁾ *Ibid.*, p. 80 ff.

²⁾ *Ibid.*, p. 86.

³⁾ »From China to Palmyra», vol. XXV, No. 1, March, 1943, pp. 358—362.

⁴⁾ »Han Damasks», vol. I, No. 2, Summer, 1948, pp. 63—81.

⁵⁾ *Textiles de Palmyre III*, 1940, pp. 39, 40, pl. XII; also Charleston, *op. cit.*, figs. 8—10.

⁶⁾ Ackerman, *op. cit.* p. 689.

L. C. vii. 09 damask as well), which could not possibly be anything but Chinese, was completely ignored in her stylistic analysis. And except for a brief comment to the effect that these textiles showed »Far Eastern characteristics in the weaving», which, according to Dr. Ackerman, indicated that »possibly they were woven in a district like Khotan where Iranian and Chinese cultures both infiltrated», the question of technique was similarly passed over without any discussion. The inflexible bias indicated by this omission is clearly apparent, because no such weaves as these warp-patterned damasks and polychrome compound cloth silks, which are so typical of Han China, can be proved to have had any history whatever in West Asiatic countries, either before or after the period to which the Lou-lan and Palmyra textiles are attributed.

As to the stylistic implications of the S 9 Palmyra pattern, it can scarcely be doubted that its direct relation to the so-called Sasanian style posed a serious problem for exponents of West Asiatic culture who profess to see no evidence of early Chinese influence in the stylistic repertories of the West. Whether or not they eventually accept this newly-discovered confirmation of the theories of Strzygowski and Stein, it is to be hoped that specialists in Chinese art will recognize its importance. As the only direct link that has as yet been discovered between the stylistic repertory of Han and the so-called Sasanian style of T'ang, the S 9 textile serves notice that new décor styles were being developed during late Han which, in the next four centuries, might well have burgeoned out into the lovely T'ang repertory with much less influence from the West than has commonly been assumed. It must be remembered that between the S 9 textile with its delimiting date of A. D. 273 (when Palmyra was abandoned) and the early 7th century silks found at Astana, which included several of the »Sasanian style» patterns, there is not a single accurately datable Chinese textile known, and few that have even been tentatively assigned to this four-century interval. That there were important stylistic and technical developments in Chinese weaving centers during the Six Dynasties period can scarcely be doubted, but for some inexplicable reason art historians and textile specialists have always unquestioningly regarded the new features that turn up in the T'ang textile repertory (and in other categories of Chinese art as well) as contemporary borrowings from countries to the West. Until and unless textiles are found in accurately datable Six Dynasties sites, it will not be possible to determine the origins of many of the T'ang décor styles, but in the meantime we can and should discontinue the practice of regarding the interval between Han and T'ang as a period of suspended animation in the decorative arts.

Vivi Sylwan's *Investigation of Silk from Edsen-gol and Lop-nor*,¹⁾ which was noted above in connection with our discussion of the history of the twill weave in China, cannot properly be commented on here at any length in advance of two reviews of the book that are scheduled to appear shortly in Far Eastern periodicals. It

¹⁾ Stockholm, 1949. The silks which formed the basis of this study were found by Sven Hedin and Folke Bergman between 1930 and 1934.

must suffice at present to say that Miss Sylwan's technical observations, especially those which have to do with Han weaves, make this a very useful book indeed, and inasmuch as the material on which her study was based has since been returned to the Peking Government, it is gratifying to have such a meticulously detailed record of it for reference.

One of the most surprising developments of recent years was the revelation that a considerable number of Chinese export textiles had been tucked away in the museums and church treasuries of Sweden and other Scandinavian countries for anywhere from two to six and a half centuries. Only two or three of these textiles, which range in date from the 9th to the 18th century, appear to have been published, even in Swedish, prior to Agnes Geijer's study of them in *Oriental Textiles in Sweden* which appeared in 1951.¹⁾ The historic events with which many of the silks were associated provide a *terminus ante quem* basis for dating that is all too rare in Chinese textile history, and the material is for this reason unusually noteworthy. Although Dr. Geijer's previous experience as a specialist had been in the field of European and Near Eastern textiles, she showed remarkable discernment in her recognition of Chinese patterns and techniques which had never previously been identified as such, and her publication therefore marks a step forward in Chinese textile studies.

After seeing as many as possible of the Chinese textiles which figured in the Geijer book during the summer of 1953, the writer suggested doing a somewhat expanded study of several of the more important pieces and was assured of Dr. Geijer's whole-hearted approval. The proposed study has been long delayed, and as it appears here, has been enlarged beyond the scope of the original plan in order to accommodate a brief appraisal of the sweeping criticisms that were leveled at Dr. Geijer's text by Professor Schuyler Cammann, who reviewed the Chinese section of the book in 1953.²⁾ Although a leisurely discussion of the textiles does not combine too smoothly with a running commentary on Mr. Cammann's views, it may, in fact, profit from the merger. For however unhappily we may regard them, some of the unorthodox Cammann theories do supply a dramatic *raison d'être* for further elaboration of the Geijer text, which might otherwise have been deemed superfluous.

The single example of 9th century Chinese weaving preserved in Sweden³⁾ is a tiny fragment of lozenge-patterned damask that turned up in an early 10th century grave at Birka, the well-known Viking city on the island of Björkö, in Lake Mälär. This scrap of early Chinese weaving, which was easily identifiable as such from its characteristic lozenge pattern and from the warp-patterning technique in which it was woven, is believed to have reached Sweden via the Khazar Caspian Sea traders who had access to one of the Chinese silk routes to the West. As the sole example

¹⁾ Copenhagen, 1951. The majority of the textiles discussed in this volume are Near Eastern.

²⁾ The Cammann review appeared in the *Journal of the American Oriental Society*, vol. 73, no. 3, July–September, 1953, pp. 173–176.

³⁾ Geijer, *op. cit.*, pp. 34 and 97 (No. 1); illustrated on pl. 2, No. 1.



Fig. 3

of T'ang weaving which is known to have reached Europe at this early date, the Birka fragment is an important link in the growing chain of evidence about China's vast export trade in silk.

The most beautiful and, in a sense, the rarest silk described and illustrated in Dr. Geijer's book is the No. 2 textile (See our fig. 3 and Pl. 1 b). This is a crimson-red twill damask which, though not actually in Sweden, was included in the Geijer book because of its close association with Swedish history. The silk serves as a cranium-shaped cover for a reliquary in Åbo Cathedral in Finland, which is believed to contain parts of the skull of Eric the Holy, the Swedish king who was decapitated in Upsala in 1160. The martyred king was deified in the following century, and when his remains were moved from Old Upsala to the present cathedral of Upsala — presumably in 1273 or shortly thereafter — it was probably considered fitting and proper that the relics of St. Eric should be shared with Åbo Cathedral, then the second-ranking church in the Swedish Union. It is Dr. Geijer's belief that the reliquary cover was made for the Åbo relics at the time of their removal from Upsala. This theory is based largely on a stylistic comparison of the figural embroidery on the cover (which represents the decapitated king) with that on a famous French cope in Upsala Cathedral which is attributed to the last quarter of the 13th century.¹⁾

¹⁾ *Ibid.*, pp. 35 and 97 (No. 2).

The pattern of the silk itself also suggests a late-thirteenth century date. Although the décor style represented here has no known parallel in the Sung repertory, there can be little doubt that it exemplifies a well-established tradition of the 13th century, for immediately after 1300 the main features of the style turned up in the silk patterns of Italy and Persia. As in the pattern shown here in fig. 3, the Italian and Persian designs presented dramatically-posed birds and animals disposed in oblique formation and surrounded by flowering vines (instead of the floating clouds of the Åbo Cathedral silk). The Chinese origin of such patterns can not be doubted because many of the western versions feature the Chinese dragon, *fêng-huang*, and *ch'i lin* as well as other fabulous creatures of the Far East.¹⁾ The joyous abandon with which Italian designers embraced the concept of «life-motion» which patterns like this exemplified led eventually to extravaganzas in which birds and animals were represented in grotesquely agitated poses, the interspaces often being filled with shooting rays that emanated from clouds, stars, and even from the animals themselves.²⁾ When reaction against these unnatural fantasies finally set in a century or two later, the Italian designers drifted back to more static representations of flora and fauna, but the conception of dynamism which the Chinese textile patterns had brought to the West was never thereafter entirely disregarded by European designers and it eventually became a motivating influence in Gothic art.

As the only known prototype of one of the most popular décor styles of Italy and Persia in the 14th and 15th centuries, the Åbo Cathedral silk must therefore be regarded as a tremendously important «find». And it is also, as Dr. Geijer remarked, one of the few textiles as yet discovered which can be assigned to the 13th century on the basis of specific historical evidence, the only other comparable example being the famous dalmatic of Pope Benedict XI (d. 1304), the main part of which is preserved in the Sacristy of St. Domenico in Perugia. (Two fragments are in the Metropolitan Museum collection.)

A second and more familiar Chinese décor style is exemplified by the textiles listed in the Geijer book as nos. 3 and 7 (shown here in Pl. 2 b and c). The palmette and vine patterns of these silks represent one «arm» of a Chinese decorative concept which, in its dual form, i. e. in symmetrical as well as asymmetrical treatment, inspired two of the most important derivative styles of all time. At least a dozen of the late Sung or early Yüan textiles that helped to propagate these new style trends in the West have been preserved in the church treasuries of Europe and some have also been found in Mohammedan graves in Egypt.³⁾ Most of the patterns of these export silks show the palmette and vine theme in the asymmetrical scheme

¹⁾ Otto von Falke, *Decorative Silks*, figs. 286, 287, 325, 328.

²⁾ *Ibid.*, figs. 365, 366, 368, 371, 376—381.

³⁾ Cf. especially Falke, *op. cit.*, figs 265—269, 275, 276; also Smith, *Brief Guide to Chinese Woven Fabrics* in the Victoria and Albert Museum, pl. I, 1 and 2; pl. II, 1; also Pauline Simmons, *Chinese Patterned Silks*, New York 1948, fig. 31.

of composition which is to be seen in the silks in Sweden, but there are several versions of the symmetrical arrangements as well.¹⁾

The asymmetrical palmette pattern of China seem to have become the vogue in Europe immediately after their introduction about 1300 but their influence did not travel as far or last as long as that of the symmetrical arrangements, partly, no doubt, because they exemplified a restless alien style which was popular only so long as it remained a novelty. The stylized palmettes in both styles were derived from flowers, which in the Chinese repertory were often, though not always, lotus blossoms. In the asymmetrical patterns, these were arranged in horizontal registers, the palmettes in each being so placed that they formed right and left diagonals with those of the registers above and below. The vertically-oriented wreathing vines of the patterns were designed to emphasize the diagonal arrangements of the palmettes by undulating first right, then left in their upward climb. In most of the patterns, this emphasis on the diagonals is accentuated still further by tipping the palmettes themselves in alternating directions. Many innovations are to be seen in the minor details of the palmette and vine patterns. The centers of the palmettes may be buds, conventionalized flowers, lozenge nets, conventionalized *shou* characters, or, in silks woven for the Mohammedan world, Arabic inscriptions. One also finds palmette motives which look more like stylized clouds than derivatives of the lotus or any other flower, with floating »ribbon» fillets substituted for the wreathing vines. Some of the most beautiful of the Chinese silks patterned in this manner are monochrome or two-color damasks which were found in Mohammedan burying grounds in Egypt.²⁾

The No. 3 textile in Sweden (seen here in Pl. 2 c and fig. 4), which exemplifies the true asymmetrical palmette and vine pattern, is a red twill damask used for the ground material of an embroidered altar frontal in Eskilstuna Church. The embroidery itself is attributed to the years around 1300 by Swedish scholars, which would place the silk as late 13th or very early 14th century. In its present worn and decomposed state, this is the least attractive of the known Chinese silks in this category, and one is inclined to suspect that it was never a very distinguished example of Chinese designing. It is, nevertheless, a characteristic representation of the asymmetrical palmette and vine theme, and its Chinese origin is indicated by the twill-on-twill damask technique which was, so far as we know, peculiar to China at this period.

A comparable but more effective example of this décor style is to be seen in a 13th century silk in the Victoria and Albert Museum (see Pl. 2 a).³⁾ In this the palmette and vine theme is much more skillfully handled, and being woven in »strap gold» (on a red satin ground), the pattern has a clarity which would be

¹⁾ Falke, *op. cit.*, fig. 266, and Smith, *op. cit.*, pl. I, 2.

²⁾ Falke, *op. cit.*, fig. 275; Smith, *op. cit.*, pl. I, 1; Simmons, *op. cit.*, fig. 31.

³⁾ Smith, *op. cit.*, pl. II, 1. A fragment of brocade in the Kunstgewerbe Museum, Berlin (Falke, fig. 269) has exactly the same pattern.



Fig. 4

impossible to achieve in a damask weave. The »strap gold», i. e., gold leaf on strips of membrane, is a significant factor in establishing a Chinese provenance for the Victoria and Albert piece, since this kind of gold »thread» is generally believed to be peculiar to China. In this silk, as in the damask described above, the hearts of the palmettes are lozenge nets.

The no. 7 textile in Sweden (illustrated here in Pl. 2 b) is a fragment of an ecclesiastical vestment preserved in Upsala Cathedral. The pattern of this silk exemplifies a slightly different version of the asymmetrical palmette and vine theme. Here the vine is more elaborately foliated and more broken up into separate units than in the examples discussed above, and the hearts of the palmettes, instead of being lozenge nets, are six-petalled stylized flowers. As in the case of the Victoria and Albert silk, the pattern is inwoven with »strap gold»¹⁾ (on dark blue satin)

¹⁾ The metal thread of this silk is much brighter than is usually the case with »strap gold». Dr. Geijer had it subjected to spectrum analysis, which revealed a strong amalgamation of silver in the goldbeater's skin. (See Geijer, p. 98.)

and is remarkably effective. This fragment is attributed to the 14th century and is quite obviously a later version of the asymmetrical palmette décor than the two examples discussed above.

It is necessary at this point to interpolate a brief note of explanation about the terminology which Dr. Geijer employed in her discussion of the palmette silks discussed above, if we are to understand the reasons for Mr. Cammann's rejection of her Chinese attribution for the No. 3 textile and for two others as well. Dr. Geijer referred to the palmette motives as »pomegranates», a term which Mr. Cammann interpreted in its literal sense, being unaware, apparently, that in textile terminology, the expression is not meant to be taken literally. The history of this usage in connection with the palmette patterns has been summed up by Falke as follows: »Italian silk art of the 15th century was not content with developing the animal designs of the Trecento in an Europeanized form, but produced a highly successful new creation in the late Gothic silk style, the manifold expressions of which are comprised in the collective name »Pomegranate Pattern» . . . The collective name of »Pomegranate Pattern», which was first used in the 19th century, could strictly only be applied to a part of the late Gothic patterns. There are many vine patterns of this period . . . which contain no forms resembling a pomegranate, and in many other patterns the fruit or blossom derived from the lotus flower — which forms the core of the real Pomegranate design — are more like a thistle or an artichoke. The early Inventories call all variants, as they did in the 13th century pine cones, *pomme de pin*, or simply *pomme*.

»It is evident that the pomegranate pattern is derived from the lotus flower . . . There is no lack of Italian transition forms of the Trecento period. Starting with the Chinese prototype, with its inner palmette and enclosing wreath of flowers . . . the way leads over the Trecento forms . . . to the fully developed Gothic forms . . .»¹⁾

Although a good many scholars have given up the pomegranate terminology in favor of the more general palmette designation, the earlier practice is still so prevalent among European textile specialists that it is surprising to find any scholar, textile expert or no, who is unaware of the fact. And in the present connection it is even more surprising to note that Mr. Cammann thought it unnecessary to base his rejection of Dr. Geijer's Chinese attribution for the silks in question on any more substantial evidence than a (to him) misidentified motive. His opinion, which followed his criticism, of the author's views about two other textiles, was: »Moreover, any familiarity with the special conventionalizations of the pomegranate so commonly used by Chinese artists and artisans would have made it obvious that No. 3 (and Nos. 14 and 15 as well) could never have been woven in China.» In its least important aspect, that of revealing his own unfamiliarity with textile terminology, this is a peculiarly unfortunate remark on the part of the reviewer. In its broader implications, i. e., in the out-and-out rejection of a Chinese provenance for the silks

¹⁾ Falke, *op. cit.*, pp. 39, 40.

without any reference to their stylistic and technical characteristics, and in the failure to suggest any alternative, this might well be considered one of the most irresponsible opinions on record.

Why Mr. Cammann's criticism of Dr. Geijer's identification of the above-mentioned silks did not extend also to the No. 7 textile is difficult to understand, for it too carried the author's pomegranate designation. One might venture a guess that it was because the tight little cluster of o-shaped petals of the conventionalized floral motives in the centers of the palmettes were taken for pomegranate seeds. It is, of course, conceivable (though unlikely) that that is what they are, but under any designation, these palmettes, too, bear little resemblance to the «special conventionalizations of the pomegranates used by Chinese artists and artisans».

Nos. 4 and 5 in the Geijer book (seen here in Pl. 3 a and b) belong to a third décor style which is little known in the West but which can be assumed to have played an important role in China during the Sung dynasty and an even more important one in Japan from the 12th to the 19th century. Japan is the chief source of information about textiles with patterns like these because most of the early Chinese silks in this category that have survived are in Japanese museums and private collections where they are recorded as tea ceremony silks imported from China and attributed to various periods between the 12th and 16th centuries. This information has been gleaned from Japanese scholars and from the brief text which accompanies an album of woven reproductions of famous textiles in Japan entitled *Meibutsu-gire*.¹⁾ The Japanese call silks with patterns like these *hana-usagi* (flower-rabbit), regardless of the animal portrayed, which is usually a rabbit or a dragon, more rarely a fabulous rhinoceros-like creature like the one seen in Pl. 3 c, which is a *Meibutsu-gire* reproduction of a 15th century tea-ceremony textile in the collection of the Matsudaira family in Izumo province. A still earlier example in Japan which is not represented in the *Meibutsu-gire* album but which was included in the exhibition of textile reproductions circulated in the United States some years ago by the American Federation of Arts is the famous Kofuku brocade in the collection of Marquis Mayeda.²⁾ The Mayeda silk, which has been traditionally ascribed to late T'ang or early Sung, features dragons in its pattern.

There are many variations of this décor style. The principal elements in it are semi-conventionalized animals in cartouche «frames» of clouds or foliage which are arranged in horizontal rows against a geometric-patterned ground of monochrome damask weave or, more rarely, against a plain ground. The grouping of the cartouches is the same as that in the palmette patterns noted above, that is to say, they never stand directly under or over those of contiguous registers and consequently form diagonals running right and left at 90° angles to each other. The pose of the animals more or less dictates the shape of the cartouche, which usually

¹⁾ «Reproductions of Famous Textiles» in the Tokyo Imperial Museum, Tokyo Imperial School of Art, and other Celebrated Collections. Compiled by Yusaku Imaizumi. n. p. Shokuho-kai, 1921.

²⁾ Simmons, *op. cit.*, p. 21 and fig. 25.

approximates a square, rectangle, oval or palmette shape. The foliage or cloud elements, though asymmetrical in arrangement, are so placed that they give perfect balance to the cartouche as a whole, the lower border of which is usually oriented in a horizontal direction.

The great distinction which the Chinese *hana-usagi* textiles achieved in Japan as adjuncts of an esoteric ritual introduced from China in the 12th century suggests that they were designed and woven expressly for that purpose, and it is not surprising, therefore, that few of them have turned up in the West. Japan was an avid importer of Chinese silks up to the 17th century, and her pre-occupation with the tea ceremony from the 12th century on assured the Chinese of a steady market for these luxury fabrics, the patterns of which were always brocaded or inwoven with «strapgold».

To judge from the prevalence of rabbits in the later Japanese-woven *hana-usagi* silks,¹⁾ and from the «flower rabbit» terminology, this little creature was obviously the favorite in Japan, and its appropriateness in an esoteric cult so permeated by Taoist philosophy as was the tea ceremony is understandable. For it is the Taoist «moon rabbit» which we find here,²⁾ not in his moon eyrie where he is usually portrayed with mortar and pestle, pounding out the pills of immortality, but racing through or posed under foliage which is sometimes identified by Japanese scholars as *reishi*, the fungus which symbolizes longevity, and sometimes as *equiseta*, a water plant.

The two *hana-usagi* silks in Sweden, which are attributed to the 13th century, and a badly deteriorated 13th or 14th century fragment in the Metropolitan Museum (see Pl. 3 d) are the only examples in western collections that have come to the writer's attention. The Swedish silks are impressively large, and are pieced together to form the lining of a mediaeval chasuble in Upsala Cathedral. The No. 4 silk (Pl. 3 a and b) has a pattern of oval-shaped cartouches woven with «strap gold» but this patterning material is so worn that positive identification of the enclosed animals is impossible. Dr. Geijer's tentative guess that they are dragons is, however, undoubtedly correct, because only a sinuous creature like the dragon could fit comfortably in shapes like these. The background is a twill-on-twill damask with a self-tone pattern of pagoda-like motives. The cartouches of the No. 5 silk (Pl. 3 b), which are also woven with «strap gold» against a geometric-patterned twill damask ground, are clearly identifiable as the «flower rabbit» and foliage motive.

Dr. Geijer's brief discussion of the No. 4 and 5 textiles did not establish their

¹⁾ Most of the Japanese versions in the Metropolitan Museum collection show the moon rabbit sedately posed in fully enclosed flowery cartouches, not racing through foliage as in the earlier Chinese patterns. The background of these Japanese *hana-usagi* silks is usually dark blue or black, and the brocading is always done with gilded paper strips.

²⁾ I. e., the Gemmeous Hare, servitor of the genii who dispensed the elixir of life. Cf. C. A. S. Williams, *Outlines of Chinese Symbolism*, p. 187; William Frederick Mayer, *The Chinese Reader's Manual*, no. 724, pp. 234, 235; and Henri L. Joly, *Legends in Japanese Art*, pp. 111, 112.

significance as adjuncts of the tea ceremony, but it did reveal an expert knowledge of weaving methods that are peculiar to China (twill-on-twill damask and patterning with »strap gold«), as well as an instinctive awareness that the patterns were Chinese, although they were the only examples of this particular category that she had ever seen. They were obviously the only ones Mr. Cammann had ever seen too, but as in the case of the »pomegranate« silk, he rushed in to attack without checking his ammunition. His main target was Dr. Geijer's identification of the rabbit in the No. 5 textile as a Taoist symbol of long life. Prefacing his remarks in this connection with the sweeping assertion that the author betrayed a total ignorance of the symbols and motifs used in China, he continued: »Far from being a symbol of longevity, Taoist or otherwise, the hare or rabbit has had lewd associations in China which would have prevented its use as a textile pattern; the only exception being the rabbit in the moon, who is shown singly, generally pounding a mortar. The repeated hares on this textile ascribed to the 13th century would suggest that this textile and its mate (No. 4) probably came from Central Asia, or even from Persia. Chinese weaving techniques were being used in those areas before the end of the 13th century, which would account for a seemingly Chinese technique; although the statement that it is Chinese at all is open to question.»

In not recognizing the little creatures on the No. 5 textile as »moon rabbits«, Mr. Cammann complicated things unnecessarily for himself as well as for his readers. Inasmuch as it has been demonstrated, I hope successfully, that they really are the Taoist moon rabbits, and as such are, according to most authorities, symbols of longevity, Dr. Geijer's identification of them appears to be beyond criticism. As to the lewd associations which the rabbit is said to have had in China, one can only remark that no one seems to have taken them very seriously, for the rabbit has long been a favorite motive for children's lanterns and for the decoration of their shoes and hats, as well as a popular subject for Chinese artists and artist-craftsmen.

All of the textiles described above except the Birka silk are presumed to have reached Sweden via one or another of the Mongol trade routes. The later textiles described in the Chinese section of Dr. Geijer's book include a few examples whose route to Sweden from the East is definitely known, but in some cases it is not possible to determine whether they came via the East India trade route or via Russia. These later textiles exemplify a variety of décor styles, some purely Chinese, some intermixtures of Chinese and imported decorative concepts but recognizably Chinese in origin, and some that are not related in any way to established Chinese décor styles, yet seem to be Chinese weaves. The last-mentioned category poses problems of identification which the writer does not consider herself qualified to deal with. Although it is known that the Chinese exported silks in the 18th and 19th centuries that were copies of western patterns and sometimes rather dreadful travesties of western styles, very few of these silks appear to have reached America. It has been difficult, therefore, for American textile specialists to familiarize themselves with the technical characteristics of the silks in this category, which must, in

most instances, be the deciding factor in determining whether they did actually originate in China. Dr. Geijer, on the other hand, has seen a great many of these silks, not only in Sweden but also in other European countries, and her experience with European and Near Eastern techniques gives her a basis for comparison that is invaluable. Her opinion about the silks in question, which was based on technical characteristics as well as on stylistic evidence, must therefore be respected, although there is obviously a need for concerted action in this area of investigation.

Our consideration of the later textiles in Sweden will, therefore, be restricted to some of the purely Chinese examples and to a few of the mixed-style silks that are easily identifiable as having originated in China.

During the first years of the 18th century a large group of Chinese textiles reached Sweden by a devious route and under dramatic circumstances. These were the silks which formed many of the Russian banners that the Swedish army captured from the forces of Peter the Great between 1700 and 1707. More than a hundred of the banners taken at the battle of Narva in 1700 were made of Chinese floral-patterned damasks of every hue and color, and it can be assumed that the silks were recent imports from China because many of the banners were emblazoned with the Order of St. Andrew which was not created until 1698. As the first tangible evidence as yet discovered (so far as the writer is aware) of China's trade with Russia during the last half of the 17th century (for which Dr. Geijer produced some interesting documentation on pp. 26 and 27 of *Oriental Textiles*), these silks are extremely important from an historical standpoint, and even more important as a frame of reference for the study of other 17th century Chinese textiles. According to a later publication of Dr. Geijer's,¹⁾ the banners were stored away until about 1850, when they were installed (along with other trophies of war) in the Riddarholm Church, Stockholm, where they remained on view until 1906. Details of six of the banners which have lately been restored under the author's supervision were reproduced in *Oriental Textiles* (on pls. 4, 5 and 6). Five of the silks have floral patterns, some of which are constructed on approximately the same principle as the symmetrical and asymmetrical palmette patterns of the 13th and 14th centuries (see Nos. 9 and 10, pl. 5 of *Oriental Textiles*). These undoubtedly reflect styles that were developed early in the Ming period. Two of the banners (Nos. 11 and 12, pls. 4 and 6) show a more loosely-integrated floral style which became popular in late Ming and early Ch'ing. One of the banner damasks (No. 15, pl. 6) has a pattern which Dr. Geijer describes as originating from an Italian Renaissance fabric, and which, on the basis of certain technical features and stylistic details, she believes to be a Chinese copy of a western design.²⁾ Since most if not all of the Chinese damasks of this

¹⁾ «Chinese Silks Exported to Russia in the 17th Century» *Bulletin No. 25 of The Museum of Far Eastern Antiquities* (Stockholm), 1953, pp. 1-18.

²⁾ The Cammann review disallowed a Chinese origin for this and for four other silks which have un-Chinese patterns for reasons which do not, in the writer's opinion, prove his case. In his comments on the No. 13 banner silk, Mr. Cammann declared that the only Eastern source for silks with patterns

period were woven in the same manner as western damasks, i. e., as reversible fabrics in which areas of satin adjoin areas of simple weave on the face and on the back in exchanged positions, only the texture of a silk like this gives any technical clue to the country of its origin, so the problem of identification is a difficult one.

In her later expanded study of the banners noted above, Dr. Geijer included photographs of several additional floral damasks and of one with a beautifully conventionalized cloud pattern. The author's stylistic analyses in this paper are much fuller than those given in *Oriental Textiles*, and her comments on the mixed-style patterns and on the out-and-out imitations of European décor styles that the Chinese

of «such monstrous bad taste» would have been Macao or Japan, and that there was no evidence that such textiles ever got into China, even for re-export. The implication here that the Chinese never wove such patterns themselves is surely not defensible. Although the writer is not prepared to assert that the silk in question was made in China, neither is she willing to disclaim a Chinese attribution for it on the grounds of its «monstrous bad taste». Many of the ceramic export wares turned out at this time by the Ching-tê-chên factories as well as by those in Canton were as ugly in their way and as un-Chinese as is this silk. It seems reasonable to suppose, therefore, that Chinese craftsmen were quite willing to cater to their customers' tastes and even to add a few tongue-in-cheek flourishes of their own.

Dr Geijer's Chinese attribution for nos. 14 and 15 (*Oriental Textiles*, Pl. 7) was rejected by Mr. Cammann simply and solely because of her «pomegranate» designation for their patterns. Nos. 17 and 27 (*Oriental Textiles*, pls 8 and 13), on the other hand, were rejected as Chinese chiefly because of their yellow color. Mr. Cammann's statement in this connection was very positive: «Yellow was the Chinese imperial color, and textiles in this color were not exported.» Although there is no reason to doubt that the use of yellow in China was restricted to the imperial family, there is every reason to doubt that the prohibition extended to silks made for export. It certainly did not apply in the case of silks exported to Russia during the 17th century, for one of the banners published in Dr. Geijer's *BMFEA* article is made of yellow floral-patterned damask (see pl. 6: 1 and p. 17 of the Geijer article). Nor did it apply to the embroideries which were made to order in Canton for English and European customers in the 18th and 19th centuries, because many of these were done on yellow satin grounds. The Victoria and Albert Museum has a handsome embroidery done on yellow satin on which the arms of the first Duke of Chandos (early 18th century) are emblazoned, both drawing and embroidery being typically Chinese (see *Brief Guide to Chinese Embroideries* in the Victoria and Albert, pl. III and p. 11), and many western museums have coverlets and hangings with pseudo-Chinese patterns embroidered on yellow satin in the characteristic twisted floss technique of Canton. That embroideries of this type were made for export can easily be verified. In an article entitled «Origins of the 'Oriental Style' in English Decorative Art» which appeared in *The Burlington Magazine*, vol. XCVII, April, 1955, John Irwin quotes (on p. 114) an interesting passage from the *Scattergood Papers* in this connection. The quotation was taken from a letter written on 13th May, 1713, by the Governor of Fort St. George to W. Phipps and J. Scattergood at Canton: «I deliver you herewith a pattern for embroideries, and desire you to get it me done upon three pieces of Satin, one full lemon color, another a brisk lively Cherry, and the third upon a full skie . . . Hinqa will inform you where those people live that work'd for me last voyage, and I do not doubt but that he will help you to get these well perform'd.» Although the footnote reference appended to this passage includes the additional information that because of the high prices which such embroideries were fetching at the time, the Governor's order was restricted to one blue hanging, there is not the slightest indication that the yellow hanging was cancelled because of any official restrictions against the export of yellow silk.

Five other silks which were included in this category by Dr. Geijer, Nos. 20, 23, 24, 27, 28 (pls. 10, 11 and 13 in *Oriental Textiles*), were not commented on in the Cammann review.

made for export clearly indicate the problems that have to be faced when dealing with these categories.

One of the earliest and handsomest of the purely Chinese silks which reached Sweden during the last half of the 17th century (shown here in Pl. 2d), is a beautifully-woven buff (once red) damask patterned with medallions formed by stylized cranes with fruit branches and *fêng-huang* with *ling chih* plants, the interspaces being scattered over with filleted Taoist symbols and bursting pomegranates. The textile is used as a chalice veil in Åsbo Church, Östergötland, and has the donor's name and the date of presentation, 1697, embroidered on it in gold thread. Dr. Geijer's researches in connection with the history of this silk reveal the fact that the donor, Nils Eosander Göthe, was the son of the vicar of Åsbo Church and the nephew of Samuel von Göthe, who was the Swedish ambassador to Russia from 1655 to 1699. It is reasonable to suppose, therefore, that the silk was sent or brought to Sweden from Russia by von Göthe. As an example of early Ch'ing silk weaving, the Åsbo damask has few peers and no stylistic parallels that I know of, although the medallions are closely related in style to some of the 17th century heraldic badges.¹⁾

Another Chinese silk which can be dated fairly closely from inscriptional evidence is No. 22 (pl. 10 in *Oriental Textiles*). This is a buff (once red) damask with a charming and purely Chinese design of flowering peach sprays and citron (Buddha's hand) motives. The silk is used as a chasuble in Kil Church, Närke, which is dated 1707.

No. 26 (pl. 12 of *Oriental Textiles*) can also be dated fairly closely from historical evidence. This is a floral damask used as the lining of a Torgod dress. The silk itself is not a very distinguished example of Chinese designing but its association with Lady Brigitta von Scherzenfeld's colorful adventures in the East (*Oriental Textiles* pp. 59, 60) makes it an interesting historical document. Lady Brigitta returned to Stockholm in 1733, which establishes an early 18th century date for the silk.

Three of the mixed-style silks in Sweden which clearly reveal their Chinese origin are those recorded by Dr. Geijer as Nos. 18, 25, and 29. The first two (shown here in Pl. 4c and d are interesting examples of what a top-flight Chinese designer can

¹⁾ According to Dr. Geijer's historical sources, trade between China and Russia began shortly after the first Russian embassy was received in Peking in 1654. (See *Oriental Textiles*, pp. 26 and 27; also «Chinese Silks Exported to Russia in the 17th century» *BMFEA*, no. 25, 1953, pp. 10 and 11). Although diplomatic relations between the two countries were not officially stabilized until the Treaty of Nerchinsk was signed in 1689 (George Nye Steiger, *China and the Occident*, Oxford University Press 1927, p. 16), a great deal of trading seems to have gone on after 1654, the Siberian town of Tobolsk having been agreed on as the point of exchange. It would therefore have been possible for von Göthe to have acquired the Åsbo Church silk during the early part of his stay in Russia, either by purchase or as a diplomatic gift. It is surprising to note that neither the interesting historical associations attached to this silk nor its unique quality were remarked by Mr. Cammann, whose only comment about it had to do with Dr. Geijer's misidentification of the Taoist symbols in the pattern as «Buddhist».

do with imported decorative concepts. In the pattern of No. 18 (Pl. 4d) long curling flower-decorated leaves straight out of the Persian repertory have been integrated so cleverly with Ming-style floral arabesques that they give no impression of being non-Chinese. The Chinese gift for this kind of assimilation is, of course, proverbial, but one rarely sees examples of it which can be analyzed so easily. Another case of successful integration is to be noted in the No. 25 textile pattern (fig. Pl. 4c). Here long fancy plume-like leaves have been added to double peach blossom sprays without in any way upsetting the Chinese look of the pattern. Mixed styles of this sort may well prove to be valuable clues for the identification of some of the more complicated designs for these same leaf motives appear in many of them along with pattern elements which, although they have never been noted in the Chinese repertory, may, in fact, be other borrowings. The No. 18 silk is used as an antependium in Adolf Fredrik Church, Stockholm, dated 1733; the other is a silk used for the curtains of a canopy bed in the Bergen Museum of Arts and Crafts, Norway, which was made in 1727 or 1730.

The third silk in the mixed-style group (no. 29) which can readily be identified as Chinese is quite different. Here, as can be seen in Pl. 4a, no attempt was made to integrate the Chinese and non-Chinese elements of the pattern. Three of the »spot» motives are sharply conventionalized, some of their floral elements being forced into unnatural shapes, at least one of which might be taken for a conventionalized butterfly. In contrast to these rigid non-Chinese floral groups, the symmetrically opposed pairs of floral motives are freely and gracefully rendered in a manner that is, as Dr. Geijer noted, unmistakably Chinese. This No. 29 silk is a handsome cream-white damask in Filipstad Church, Värmland, where it is used as a chalice veil dated 1742.

The Chinese attribution which Dr. Geijer assigned to this silk was summarily dismissed by Mr. Cammann in favor of a Japanese provenance. His arguments in this connection can best be commented on if they are quoted in full: »The only remotely Chinese thing about it is the beautifully conventionalized lotus group, but this conventionalization of the flower is equally typical of Japan. Some of the other floral motifs have a rather European cast, but there is no mistaking two purely Japanese elements. One is the round medallion in the style of a Japanese crest (mon) superimposed on the floral group below the applied patch, and the second is the patch itself, which has a typical later Japanese geometric pattern (not Chinese, as stated by the author).» When boiled down to its essentials, this passage contains only one positive argument for a Japanese provenance, namely the crest-like element in the floral group immediately below the patch. (The pattern of the patch itself, although discussed by Mr. Cammann as if it had something to do with establishing the provenance of the silk in question, can hardly have any bearing on the case since it is unlikely that the patch was applied before the silk reached Sweden.) With regard to this crest-like ornament, we should like to point out that although a device like this is certainly not characteristically Chinese, it can, nevertheless, be found in some of the mixed-style patterns that China was making for export in the early

18th century. A fragment of brocaded satin in the Metropolitan Museum (see Pl. 4 b) has comparable innovations in its pattern, and other examples of it could be turned up without much trouble. The Metropolitan silk, which is in a large collection of Chinese and Japanese fragments given to the Museum in 1921 by the son of the famous Japanese textile expert, Kihei Hattori, was catalogued by the elder Hattori himself as «Chinese, ca. 1700», which makes it contemporary with the silk in question.

It might be added that the tremendous scale of the No. 29 pattern (each repeat is 68 cm high) and the quality of the weave would also militate against a Japanese provenance for this silk. Among the thousands of Japanese fragments in the Metropolitan Museum collection, there is no evidence that the Japanese could or did weave damasks of this sort. As regards the patch, which could have been added any time, Mr. Cammann is undoubtedly right in considering it to be Japanese, for a microscopic examination of the pattern revealed the fact that what appeared to be tiny lozenges are in reality *karahana* motives, i. e., the conventionalized four-petalled flower which became popular in Japan as a decorative device at a fairly early period.

An early Chinese embroidered hanging and one or possibly two «export» embroideries round out the record of Dr. Geijer's researches in the Chinese field. The hanging (Geijer, No. 126, pl. 61) is buff (once red) velvet with an embroidered pattern that features Chinese heraldic animals, the God of Longevity, and various other less exalted personages. As noted by Mr. Cammann, the heraldic animals indicate that the hanging was originally made as a presentation offering for a Chinese official. It was adapted in Sweden as an antependium, and, as attested by an embroidered inscription, was presented to Gottröra Church, Uppland, by Count Adam Ludwig Lewenhaupt and his wife in 1705. On the basis of this inscriptional evidence, Dr. Geijer dated the hanging «17th century», but in his review, Mr. Cammann made out a good case for a more specific date, i. e., late Ming, on the grounds that two of the heraldic animals portrayed on it, the *tou-niu* and *pai-tsé*, were discarded as official emblems under the Manchus, and would not, therefore, have been appropriate for a Ch'ing official.

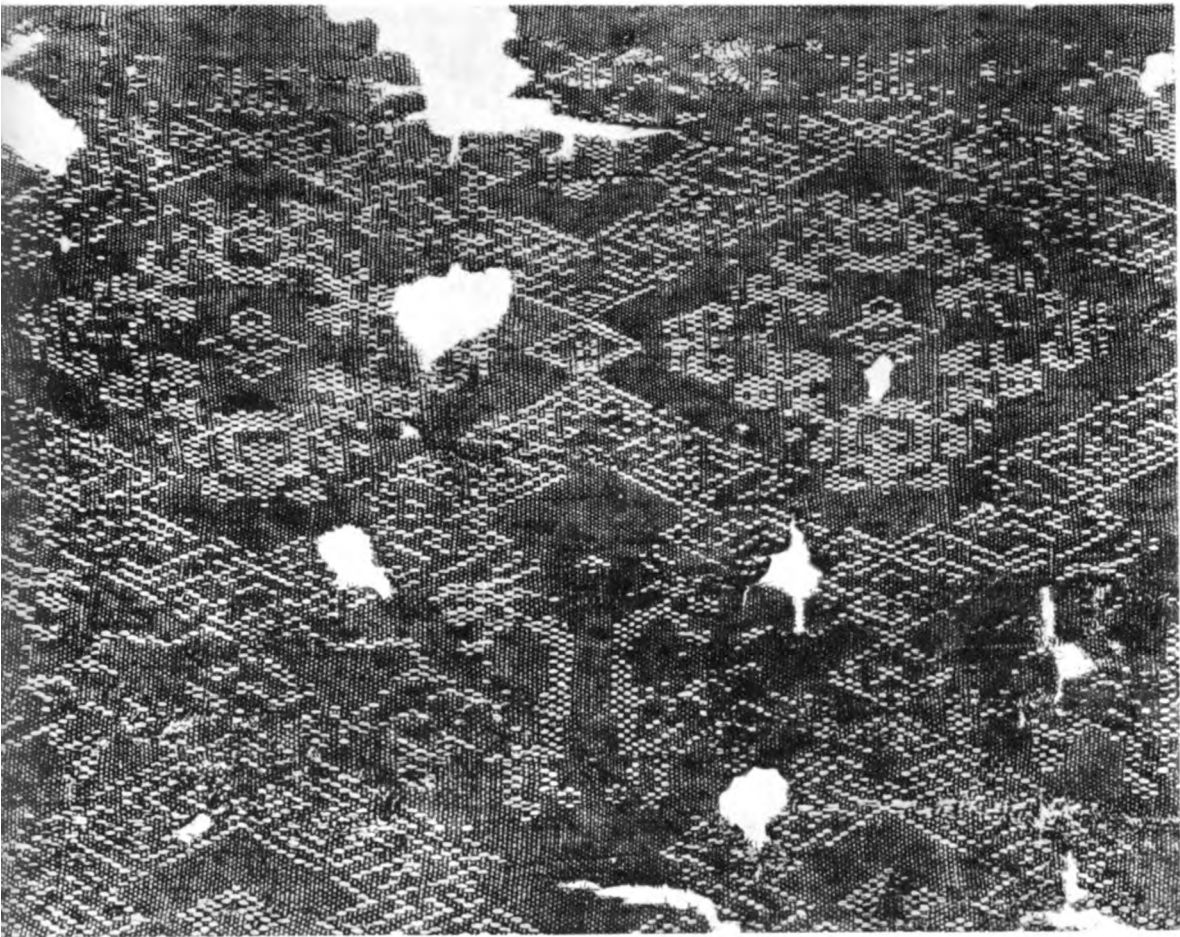
The other embroideries attributed to China by Dr. Geijer are a coverlet (Geijer, No. 128, pl. 63), and a European woman's skirt (No. 127, pl. 62) which she believes was embroidered to order in China. The latter, which is in the National Museum, Stockholm, was unfortunately overlooked by the writer while in Sweden. It is therefore impossible, on the basis of photographic evidence alone, either to support Dr. Geijer's Chinese attribution for the embroidery or to agree with Mr. Cammann that it is «clearly European».¹⁾ The coverlet, on the other hand, is too familiar a

¹⁾ Although Mr. Cammann dismissed Dr. Geijer's Chinese attribution for this embroidered skirt on stylistic as well as technical grounds, it is interesting to note how closely some of the features of the design resemble details of an early 18th century embroidered altar frontal in the collection of Lady Laura Hampton. (See A. F. Kendrick, «Textiles» in *Chinese Art* by Fry, Binyon, Sirén, Rackham, Kendrick and Winkworth, p. 43 and pl. 58). This embroidery bears the arms of Don Fernando Valdes

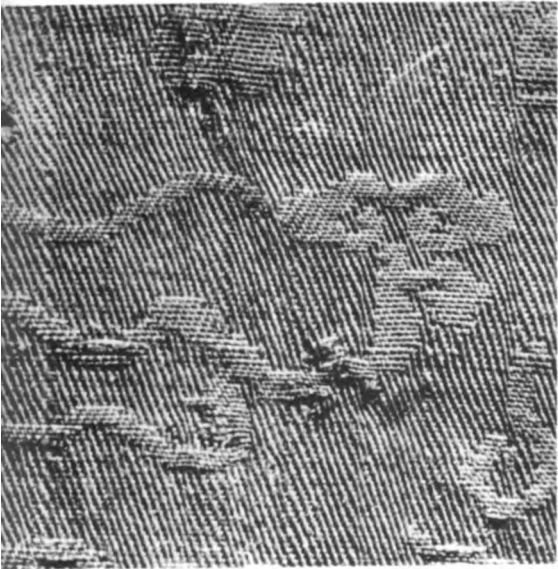
type to permit of any indecision. Embroideries like this are plentiful and can be established on stylistic and technical as well as documentary evidence as having been made to order in Canton. The designs are hybrid combinations of Chinese and Anglicized Indian or Chinese decorative concepts. Although comparable designs were also executed to order in India, the embroidery techniques of the two countries are quite different and are, as a rule, the deciding factor in determining the correct provenance. It can therefore be stated categorically that the coverlet is not, as noted by Mr. Cammann, «clearly European», but Chinese, made for export. It is in Rogsta Church, Hälsingland, and is attributed by Dr. Geijer to the 18th century, but Jahn Irwin, who has done a great deal of research on this type of material, has expressed the opinion that patterns like this are, in all likelihood, late 18th or early 19th century.

This brief appraisal of the Chinese textiles in Sweden, and of Dr. Geijer's presentation of them in *Oriental Textiles in Sweden*, does not, by any means, do justice to either. It is to be hoped, however, that it will focus attention on the need for higher standards of criticism in this field than are presently in effect.

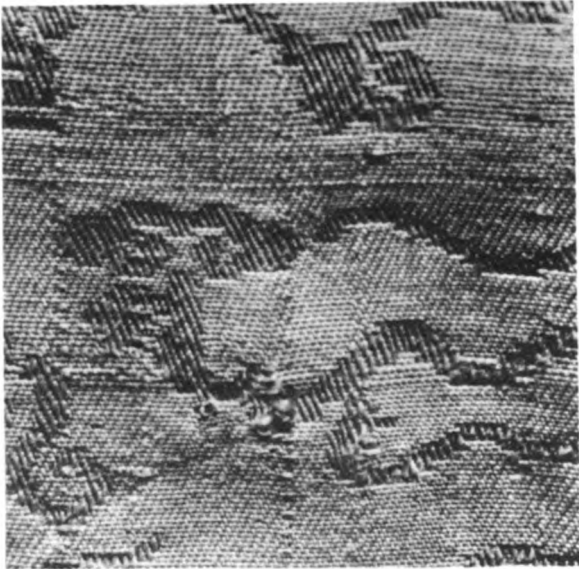
Tamon, Knight of Santiago, Governor and Captain-General of the Philippine Islands. Embroideries of this sort, which are full of un-Chinese decorative concepts, were made for the Spanish trade which was carried on in the Philippines, and for Spanish officials who were in residence there. Some of the embroideries are said to have been embroidered by Chinese who lived in the Islands, others were brought there from the mainland along with many other artistic products of China for sale to Spanish merchants. Like the embroideries exported to other European countries and to England, these were often made to order from designs submitted by westerners whose countries had already developed an 'Oriental style' of their own. The Chinese «touch» is usually discernible in the embroidered translations of these patterns, and it appears to be present in the embroidery in question, but without a first-hand examination of the technique, the writer is not prepared to give a positive opinion about its provenance.



a



b 1



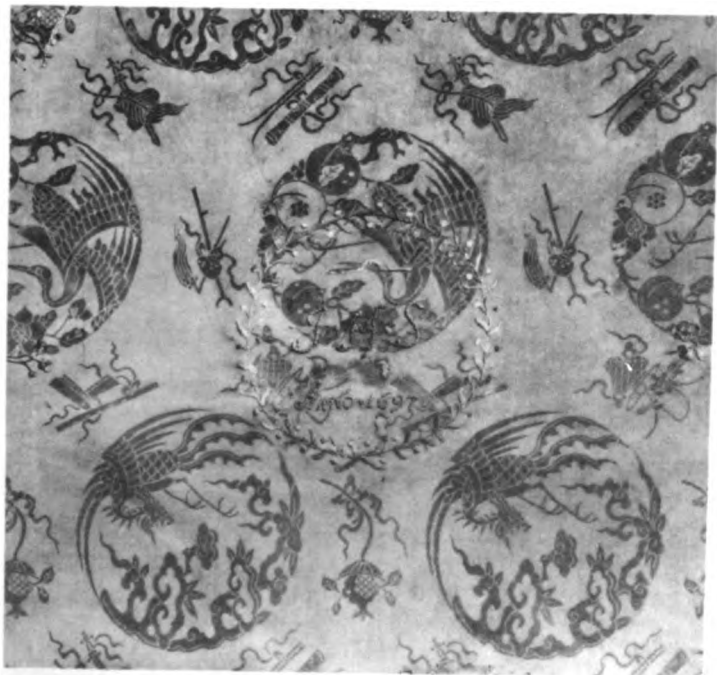
b 2



a



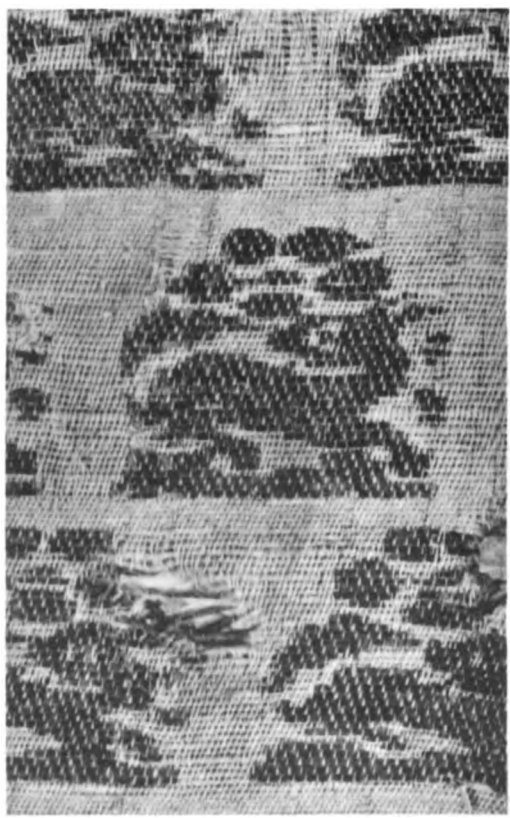
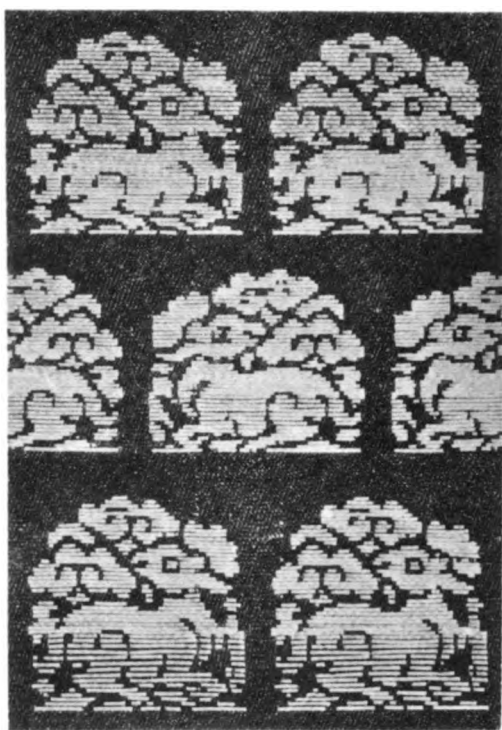
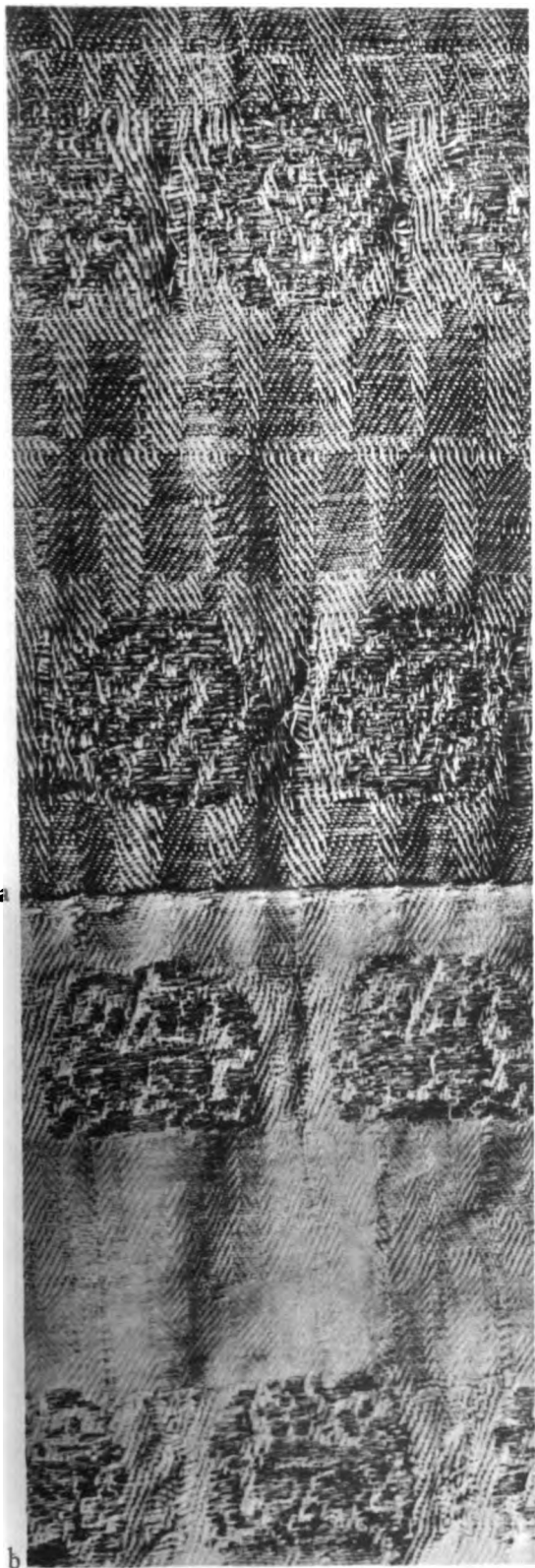
b



d



c





a



b



c



d

A LIST OF WORKS BY BERNHARD KARLGREN

PREPARED BY

ELSE GLAHN

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1. 對於死時主書諸字內韻母之研究 2. 徐炳昶 3. 高本漢方音字典序 4. 趙元任 5. 中國音韻學研究 6. 羅常培 7. 李方桂 8. 現代支那方言の記述音聲學 9. 高田久彦 10. 中國語與中國文 11. 張世祿 12. 支那言語學概論 13. 岩村忍 14. 魚返善雄 15. カルグレン氏原支那語考 16. 石濱純太郎 17. 原始中國語為變化語說 18. 馮承鈞 19. 答馬斯貝囉論切韻之音 20. 林玉堂 21. 高本漢的諧聲說 22. 中國古音切韻之系統及其演變 23. 王靜如 24. 左傳真偽考。附支那古典籍の眞偽について 25. 小野忍 26. 左傳真偽考及其他 27. 陸侃如 28. 文獻學と古代支那 29. 高畑次郎 30. 中國語言學研究 31. 賀昌羣 32. 上古中國音當中的幾個問題 33. 論考證中國古書眞偽之方法 34. 中國古書的眞偽 35. 馮沅吾 36. 藏語與漢語 37. 唐虞 38. 與高本漢先生商榷自由押音說兼論上古楚方音特色 39. 董同龢 40. 書經中的代名詞厥字 41. 最近(1927年)以後の古韻研究 42. 漢語詞類

THE SITE OF MA-KIA-YAO

BY

BO SOMMARSTRÖM

THE ARCHAEOLOGICAL FIELD WORK.

The dwelling-site of Ma-kia-yao, Ti-tao hien.

A description of this site has already been published by J. G. Andersson.¹⁾ It may be justifiable to reproduce it here together with a supplement from a manuscript by Andersson (kept in the files of MFEA). To this should be added a few remarks on finds of animal bones (*Res.* p. 43):

«This site was discovered by my collector Chin and excavated by him. Only once did I have occasion to visit this place.»

«This site is situated in Ti Tao Hsien 12 km S of the Hsien city on the west side of the T'ao river, which flows at a distance of about half a kilometer E of the site. Ma Chia Yao is a small hamlet situated on the river plain. Close to the west of the village rises the Malan terrace, which may here be estimated at a height of about 50 m.

S of the village is the mouth of a ravine, which, dissecting the Malan terrace, extends towards the west. At the mouth of this ravine there is a lower terrace, remnants of which are seen on the north as well as on the south side of the ravine. The terrace is more extensively developed on the north side, and here was found the culture deposit which forms the site. This lower terrace is 24 m. high. Separated from it only by a small gully rises, to the north, the Malan terrace, conjectured to be 50—60 m. high.

The extent of the culture deposit in an E—W direction is 350 m. In a N—S direction the site is rather narrow.»

«The terrace deposit is intersected by several small gullies, in the walls of which there are numerous excellent exposures of the culture deposit. This deposit is largely of the usual ashy type without any stratification, but in a big gully in the NE part of the deposit was noticed a well-stratified deposit of loess-like material with numerous pieces of charcoal and artifacts of the type common in the rest of the deposit. This stratified deposit had a thickness of 2.5 m and is overlaid by 3—4 metres of unstratified loess-like material in which there is no charcoal and artifacts are scarce or entirely absent.

The typical ashy earth also attains to thicknesses of 2 metres and possibly locally more. In some places also this type of deposit shows stratification, often under a rather steep dip indicating a refuse slope.

In this place it was noticed that the pottery sometimes shows the same yellowish-green mineral coating as was first noticed at Yang Shao Ts'un. In addition to the painted

¹⁾ J. G. Andersson: *Researches into the Prehistory of the Chinese* (henceforth referred to as *Researches* or *Res.*) pp. 88—89 (BMFEA 15, 1943).

pottery there are numerous fragments of monochrome ware, partly ornamented with coarse cloth impressions, partly polished smooth like some finds at Yang Shao Ts'un.

This site is conspicuous for its excellent bone objects. On our visit to the place on 4/7 Chin found in one spot in the stratified deposit of the above-mentioned big gully five triangular bone arrow-heads (?), three of them complete.» —

»This dwellingsite is the type locality of Kansu middle Yang Shao. In the wealth of its well-preserved artifacts it is one of our foremost sites.» —

»At Ma Chia Yao in Kansu, the very rich dwelling site of Yang Shao age, the domestic pig was most abundant. The only other domesticated animal at this site was the dog.

The wild animals found at Ma Chia Yao are very remarkable. Of cattle there are very large bones of *Bos namadicus* Falconer and Cautley, of deer large specimens of *Cervus canadensis*. The sika deer and the roedeer are also apparently represented.

Most interesting of all is the find of a femur of *Rhinoceros* sp.»

Andersson has given in *Researches* (»Yang Shao sites in southernmost Kansu«, pp. 99—104) a few examples of finds of painted pottery related to those of the Ma-kia-yao site. In connection with our description of the Ma-kia-yao finds we shall give references showing the geographical distribution of its most important types; a detailed list of the materials found in the related sites falls outside the scope of this article. In the list of find places given below as a key to our later cross-references we shall only very briefly indicate the nature of such finds in each locality as are of interest for our present study.

The find localities are arranged according to districts (hien), running from north to south.¹⁾

LIST OF SITES

- | | |
|---------------------------------------|-------------------------|
| 1. San-kio-ch'eng | 19. Ta-shī-ts'üan |
| 2. Huang-hao-tsing | 20. Kao-ying |
| 3. Sha-tsing | 21. P'o-lu-chu-ti |
| 4. T'u-men-tsī | 22. Yang-shan |
| 5. Kokonor: »Pillar« | 23. Pai-tsī-ch'eng |
| 6. Hia-si-ho | 24. Ya-tsī-tsui |
| 7. K'ia-yao | 25. Sü-kia-hia: Pei-p'o |
| 8. Chu-kia-chai | 26. Ye-tsi-kou: Pei-p'o |
| 9. Sī-er-chai | 27. Ts'ao-kia-kou |
| 10. Shī-li-p'u | 28. Kuan-ch'u |
| 11. Ma-ch'ang-yen | 29. Siao-shī-hia |
| 12. Hei-t'ou-chuang | 30. Hui-tsui |
| 13. Lo-han-t'ang Village (Gomi-tanju) | 31. Ka-t'u-ma-kou |
| 14. Lo-han-t'ang West | 32. Sin-tien B |
| 15. Ho-kia-sī | 33. Ts'i-kia-p'ing |
| 16. Wen-ch'ang-miao | 34. Tung-p'ing |
| 17. Kung-pai | 35. Pan-shan area |
| 18. Lanchou | 36. Yüan-tsui |

¹⁾ The map is a simplified version of one drawn by Andersson in connection with the manuscript mentioned above.

- | | |
|---------------------|---------------------------|
| 37. Ts'ao-kia-p'ing | 44. Shi-kia-chen |
| 38. Che-kia-wa | 45. Hung-t'u-p'u |
| 39. Jen-kia-chuang | 46. Liu-kia-shang-mo |
| 40. Shan-chuang | 47. Li-kia-wan |
| 41. MA-KIA-YAO | 48. »Chi-li-tung» |
| 42. Sī-wa-shan | 49. Ts'ing-shui hien city |
| 43. Pai-she-p'u | |

1. Yung-ch'ang hien: Site outside the San-kio-ch'eng fort.

In the unpublished manuscript by J. G. Andersson mentioned above we have the following notes about this site:

»It should be noted that until September 1924 we hardly knew of any Yang Shao site north of the Huang Ho and Hsining Ho valleys. A small body of material obtained in 1923 by one of my collectors at T'u Men Tzu in Ku Lang Hsien added but little to our knowledge as it was very poor.

It was then a great and very pleasant surprise when a rich Yang Shao site was found by me close outside the San Chio Ch'eng fort. —

A search round revealed the fact that the ground on this spot was strewn with stone implements and pottery fragments of Yang Shao type, — — — including also entire pots, broken into many pieces lying close together. As these finds covered a considerable area and we noticed here the black earth characteristic of dwelling-sites, the locality must be noted as very promising.»

2. Chen-fan hien: Site 1.5 km NW Huang-hao-tsing.

In several places within the area of this site, there were »rectangular, quadratic and circular spots on the absolutely level ground», these spots being of a lighter shade than their surroundings on the surface, but darker than the usual soil beneath. Andersson was inclined to interpret the spots as remnants of »some kind of houses or tents.» Here, and in the vicinity of this site, were found unpainted pottery, a few stone implements and some bronze objects.

3. Chen-fan hien: Sha-tsing, Locality 1. Bone and stone implements.

Chen-fan hien: Sha-tsing, Locality 2. Bone and stone

Chen-fan hien: Sha-tsing, Locality 3. Stone

Chen-fan hien: Sha-tsing, Locality 4. Stone

Chen-fan hien: Sha-tsing, Locality 5. 5 li east of the village. Stone

Chen-fan hien: Sha-tsing, Locality 6. 6 li east of the village. Painted pottery.

For a general account of the sites at Sha-tsing, see *Researches*, p. 197 ff.

4. Ku-lang hien: T'u-men-tsi. Stone implements, painted and unpainted pottery.

5. Kokonor (Ts'ing-hai): N of Camp III, Locality I, »The Pillar».

About this find place, which is situated at the foot of hills and among small sand dunes, Andersson (in the MS. mentioned above) gives the following information:

»At two spots in this locality I, I came across small stratified deposits with artifacts. One of these I named »The pillar», a small remnant of a former deposit which had otherwise eroded away. The »pillar» was 1.65 m high and 3.7 m in length. It consisted of five layers counted from *a* to *e*. The bottom layer was yellow barren sand. The top layer *e* was blown sand, grass-covered at the top and containing some few artifacts. The main harvest we obtained in the sandy layers *b*—*d*. The whole pillar was systematically dug through and we were very fortunate in finding here a sherd of typical painted Yang Shao pottery.

6. Si-ning hien: Dwelling-site deposit at Hia-si-ho.

NE from the village of Hia-si-ho, and at the E bank of the river were found some small exposures of a dwelling-site deposit from which a small collection of bone and stone implements, and painted and unpainted pottery, was made. (Andersson's MS.).

7. Si-ning hien: Sites at K'ia Yao.

A detailed account of these sites is found in *Researches*, pp. 185 ff.

K'ia Yao is a small hamlet in a side valley of the Si-ning Ho, and it is situated on level ground in the middle of this valley. »In a NE direction from the village, in the small cliffs, especially on the west side of this stream, there are several exposures of refuse from ancient dwelling-sites». (Our locality 1).

On the NW side of the village there is a grave-field, where Andersson discovered and excavated nine skeletons. (Our locality 2).

8. Si-ning hien: The Chu-kia-chai Dwelling-site.

Andersson has described the find localities at the village of Chu-kia-chai in his monograph »The Site of Chu Chia Chai» (BMFEA 17), and also made some remarks on the relation between these finds and e. g. those of the Ma-kia-yao site. Here will be given a summary of his notes:

»There is no trace of a Malan terrace in the vicinity, but the site is located on the river plain at the base of a hill rising more than 210 m above zero of our survey, which runs through the burial place in the southern half of the village . . . In the northern and larger part of the village, culture soil was noticed in many places, in road ravines and especially beneath the dwellings. In fact, the best places were just inside the village below some houses . . .». (The dwelling-site forms) »a triangular figure with a length in a N—S direction of 850 m. and a maximum width of 470 m. . .»

9. Si-ning hien: Si-er-chai.

A small collection of painted pottery of MKY type, and unpainted pottery.

10. Si-ning hien: Shi-li-p'u.

»As indicated by the name, this site is situated ten li from Hsi Ning city. The site itself is located to the east of Shih Li P'u, a village close by the road leading to Hsi Ning and just where this road crosses a small stream . . . this site was discovered by Chuang, when we were travelling up to Hsi Ning, and the find was very important in so far as it was the very first indication of the Yang Shao culture in NW China.»

Excavations yielded a fairly small collection of artifacts of shell, bone, stone, and painted and unpainted pottery. (Andersson's MS.).

11. Nien-po hien: Ma-ch'ang-yen.

In the later part of the summer of 1924 Andersson sent Chuang up the Si-ning River to continue the previous year's search for prehistoric sites. (Cf. *Res.*, p. 159—160). He brought back a large material of the Yang Shao dwelling-site type, stated to have come from a place named Ma-ch'ang-yen. In his manuscript Andersson expresses the opinion that this material (bone, stone, painted and unpainted pottery) or at least a part thereof, was actually taken from the Ma-kia-yao site.

12. Nien-po hien: Mi-la-kou, Siao-nan-ch'uan, Hei-t'ou-chuang.

A small collection of painted pottery was brought from this place (situated 10 li SW from Ma-ch'ang-yen) by Chuang, on the same exploring trip as is mentioned above.

13. Kuei-te hien: Site at the village of Lo-han-t'ang.

18 km west of the Kuei-te city is situated a small village, named Gomi-tanju by the Tibetan inhabitants, and Lo-han-t'ang by the Chinese. At the edge of the plateau, on which stands this little hamlet, sherds of prehistoric type were found for a distance of a hundred metres. »Where the road leading to the village climbs to the plateau we found a place where a small excavation could be made. The deposit had a length of 6 m and a width of 2 m, and the layer of cultural soil was 0.7 m thick where it was best developed. The deposit consisted of pebbles intermixed in a loess-like matrix containing potsherds and bone-splinters. A perforated stone knife was also found here. The cliff at the top of which this deposit was found runs in a N—S direction. It is about 20 m high and consists in its lower part of Kueite beds, in the upper layer of river gravel.» (Andersson's MS.).

14. Kuei-te hien: Lo-han-t'ang West.

This site and its material have already been described in detail by Bylin-Althin (Bull. 18, p. 429 ff.). The place is located 3 li N 35° W from Andersson's camp at the village of Lo-han-t'ang. The narrow space occupied by the site forms an island of an old Malan ground surrounded everywhere by precipitous cliffs or steep slopes, about 30 metres above the modern river-plain. »Every indication goes to show that the topography 4—5 000 years ago, when the place was inhabited by the Yang Shao people, was much the same as it is today and that this spot of the old Malan surface was deliberately chosen on account of its difficult approach.»

The area of this site is 90 m long in a NE—SW and 55 m in a NW—SE direction. The level containing artifacts belongs to the uppermost loess-like stratum.

The collection brought from this site is large and comprises artifacts of bone and stone, painted and unpainted pottery.

15. Kuei-te hien: Ho-kia-si.

This site is located on the northern bank of the Huang Ho, 200 m from the bank of the river and one li S 10° E from the temple of Ho-kia-si. The finds were made upon a low terrace of loess-like soil, probably less than 10 metres above the water-level of the river. In the loess-like soil were found a stone implement and sherds of unpainted pottery.

16. Kuei-te hien: Wen-ch'ang-miao.

»West from the temple is a high gravel plateau, upon the surface of which were found a few fragments of pottery. The actual site is located below this plateau, at a distance of one li from the temple. In a low ridge 8 metres in length and 1—2 metres in width we came across a culture stratum consisting of rather large pebbles and gravel in a very fine-grained sandy matrix. The culture stratum rests upon gravel, sand and loess-like material in very distinct interstratification. — — — In this place, too, the local conditions indicate that the present topography, even in small details, was in existence when the Yang Shao people lived here.» The finds consist of a few implements of bone and stone, painted and unpainted pottery. (Andersson's MS.).

17. Kuei-te hien: Kung-pai.

Near this village, »Only a few metres above the recent river-plain there is a loess-covered terrace, and two metres above this terrace we found a stratum of dark ashy earth, its visible length 8 metres and its thickness 0.55 m.» The finds were collected along this river-terrace for a distance of more than one kilometer down towards the Huang Ho. They consist of a few stone and bone implements, painted and unpainted pottery. (Andersson's MS.).

18. Kao-lan hien (Lanchou) city.

A few complete vessels of painted pottery, quite similar to the ware of the Ma-kia-yao site, were bought in this town by Andersson.

19. Kao-lan hien: Ta-shī-ts'üan.

Ta-shī-ts'üan is a village located c. 40 li SE of the hien city. »The east end of the village is full of exposures and some bones even stick out from the high cliff NW of the village dwellings.» — The finds from the village itself are here numbered 1; those from a place in the vicinity, called Yao-men-ti; are numbered 2. The finds are quite numerous from both localities, and consist of stone implements, painted and unpainted pottery. (Andersson's MS.).

20. Kao-lan hien: Kao-ying.

Kao-ying is a small village situated 50 li SE of Lanchou. The actual diggings were carried out in the sown fields above cave-dwellings. The finds consist of a few painted and unpainted potsherds.

21. Kao-lan hien: Ch'en-kia-hien-tsī, P'o-lu-chu-ti.

This place is located near the preceding village, that is to say, about 50 li SE of Lanchou. The finds consist of stone implements, painted and unpainted pottery.

22. Yü-chung hien: Kuo-kia-chuang, Yang-shan.

Ten li NW of the hien city, and one li S of Kuo-kia-chuang, was found a small site, which yielded a few artifacts of bone and stone, and some pottery, painted as well as unpainted.

23. Yü-chung hien: Ma-men-kou, Pai-tsī-ch'eng.

This place is situated 3 li S of the hien city, a few hundred metres east of Ma-men-kou. The finds consist of a few painted sherds.

24. Yü-chung hien: Hia-k'o, Ya-tsī-tsui.

Ten li SW of the hien city, and 1 li N of Hia-k'o was found a site, from which were brought a few artifacts of stone, and some sherds of painted vessels.

25. Yü-chung hien: Sü-kia-hia, Pei-p'o.

This place is situated 12 li S of the hien city, and 1 li N of Sü-kia-hia. The finds consist of a few painted potsherds.

26. Yü-chung hien: Ye-tsi-kou, Pei-p'o.

This place, of the same name as the preceding hamlet, is situated 13 li SW of the hien city. The finds consist of stone artifacts and painted potsherds.

27. Yü-chung hien: Ts'ao-kia-kou.

In his MS. Andersson remarks that the actual site of this place, which is situated 15 li S of the hien city, is located near the top of the promontory west of a ravine, on a cliff above a field. The finds of painted and unpainted potsherds are very numerous, and there were also found several stone implements.

28. Yü-chung hien: Kuan-ch'u.

At this place, which is situated fifteen li S of the hien city, and opposite Ts'ao-kia-kou, prehistoric finds were made in ashy earth, which is exposed all the way along the SE bank along the village. The finds are few in number, and consist of bone implements and painted potsherds.

29. Yü-chung hien: Siao-shī-hia.

This site is located east of a ravine above the houses of the village of Siao-shī-hia. The exact digging places are along the bank of the top-most terrace. (Andersson's MS.). — Four digging places marked A—D exist, but in our references to the finds from this site we have not taken this sub-division into account. The finds consist of bone and stone implements, and some painted and unpainted potsherds.

30. T'ao-sha hien: Hui-tsui.

A description of this site has been given by Andersson in *Researches* (p. 167 ff; map and sections in figs. 49—51; Pls. 119—124). The site is located half a km N of a village named Sha-leng-tsi, and both places are situated just above the T'ao Ho river plain. The actual site is situated on one of the hill-like remains of an intersected terrace, rising to a height of 70—80 metres above datum level. Excavations were carried out in the ashy earth on top of the «island», the slope of which is very steep, but only a small, marginal part of this rich site was excavated. The large collection comprises objects of shell, bone, stone, and large quantities of painted and unpainted pottery (the former chiefly of the Sin-tien type of ware).

31. T'ao-sha hien: Ka-t'u-ma-kou.

From this place, which we have been unable to locate on the map, were bought a few complete painted vessels, which are related in type to the MKY painted ware.

32. T'ao-sha hien: Sin-tien B.

This dwelling-site has been mentioned by Andersson (*Researches*, pp. 173—175) in connection with the cemetery (Sin-tien A) of the same place. In his unpublished manuscript are found the following notes: «The site occupies the flat top of a hill, this flat area being part of the once unbroken level terrace plain (a Malan terrace of about 40—60 metres in height). The area occupied by refuse deposits is 100 metres in length and 55 metres maximum in width . . . Our excavations in the hill B (i. e. Sin-tien B) were not sufficiently extensive to ascertain the average thickness of the culture deposit.» At a spot near the S end of this hill a stratigraphically conducted excavation was made over an area of 5×2 metres. «This area was dug through in layers of 33 cm thickness, and below the fourth of these layers, viz. at a depth of 1.33 m from the surface, the quite barren stratum was reached.» The result of this excavation was as follows: «Layer 1 (topmost): Yang-shao and Hsin-tien pottery in about equal proportions, Layer 2: All Yang Shao, except one doubtful fragment of Hsin-tien type, Layers 3 and 4: Only Yang Shao pottery.» The collection brought from this dwelling-site, excavated on several small spots, consists of bone and stone artifacts, painted and unpainted pottery.

33. Ning-ting hien: Ts'i-kia-p'ing.

This site has been fully described by Bylin-Althin, in her monograph on the site (BMFEA 18, p. 383 ff.). The culture deposit seems to have covered a more or less continuous area, extending 500 metres in the direction NW—SE and 350—350 metres NE—SW, on the

edge of a Malan terrace facing the T'ao River. The altitude of the deposit above the river is 90—100 metres; »... the culture deposit attains thicknesses that are uncommon in Kansu but resemble the big refuse deposit of Yang Shao Tsun in Honan. At the river cliff... a thickness of 2.5 metres was measured, and two metres was noted also at a place in the southern part of the site.»

The finds comprise bone and stone implements, unpainted pottery, and also a few sherds of painted pottery of Yang Shao type.

34. Ning-ting hien: Tung-p'ing.

The site is »situated on a terrace close to the river and 45 metres above the level of the river. Here at the edge of the terrace was found within a small area an abundance of ashy earth, on one place more than 3 metres thick.» (Andersson's MS.). The materials consist of bone and stone implements, painted and unpainted pottery.

35. Ning-ting hien: The Pan-shan area.

The objects from this region were mostly bought at different places, or else are so very few in number that we have made use of a group-number for the references.

36. Ning-ting hien: Yüan-tsui.

A small collection of bone and stone artifacts.

37. Ti-tao hien: Ts'ao-kia-p'ing.

There are seven different digging-localities at this site, but as the collection brought from here is fairly small and only partly catalogued according to these localities, references will be made in a general way to the number of the site. The finds consist of bone and stone implements.

38. Ti-tao hien: Che-kia-wa.

This site is situated 8 li SE of the hien city. Here was found a fairly large number of painted potsherds of Yang Shao type.

39. Ti-tao hien: Jen-kia-chuang.

Situated 10 li SE of the hien city. The collection from this place comprises several painted and unpainted potsherds, and a few stone artifacts.

40. Ti-tao hien: Shan-chuang.

This place has not been quite exactly located on the map. The small collection consists of painted potsherds.

41. Ti-tao hien: The Dwelling-site of Ma-kia-yao.

42. Ti-tao hien: The Dwelling-site of Si-wa-shan.

This site, and a burial place of a more recent period, have been described by Andersson in *Researches* (pp. 179—180). Further excavations were carried out by Hia Nai in 1945; for a map of the area, see his report in the *Chung kuo k'ao ku hüe pao*, No. 4 (1949). The following notes are from *Researches*:

»Ssu Wa Shan is a village situated on the west side of the river at the base of a low terrace about 10 metres high...» The finds of a dwelling-site character were made on both sides

of a road at the edge of this terrace, and they are »partly exposed in the wall of the road ravine». The finds consist of several stone artifacts, a bone object, and fairly numerous painted and unpainted potsherds, the former being of Yang Shao type.

43. Li hien: Pai-she-p'u.

This site is located 30 li W of the hien city. The small collection consists of painted potsherds (partly described by Andersson in *Researches*, pp. 101—102).

44. Li hien: Shī-kia-chen.

Located 20 li W of the hien city. The collection consists of several stone implements, painted and unpainted pottery. (Cf. *Res.*, pp. 101—102).

45. Li hien: Hung-t'u-p'u.

Located 3 li S of the hien city. The finds comprise a stone object, painted and unpainted potsherds. (Cf. *Res.*, pp. 101—102).

46. T'ien-shui hien: Liu-kia-shang-mo.

This place is situated 100 li SW of the hien city. The collection is large and consists of bone and stone implements, painted and unpainted pottery. (Cf. *Res.*, pp. 101—102).

47. T'ien-shui hien: Li-kia-wan.

Located 5 li NW of the hien city. The collection is large and comprises objects of bone and stone, painted and unpainted pottery. (Cf. *Res.*, pp. 101—102).

48. T'ien-shui hien: »Chi-li-tung» (Ts'i-li-tung?).

Situated 7 li E of the hien city. The collection consists of objects of shell, bone and stone, painted and unpainted pottery.

49. Ts'ing-shui hien: Find-locality near the S wall of the city.

The small collection consists of a few bone and stone artifacts, painted and unpainted pottery.

STONE ARTIFACTS.

A few items of most groups have been described by Andersson in *Researches*. The shape and size of the implements vary and no two items are exactly alike. We have, therefore, subdivided the materials, in our description, in fairly great detail.

Most of the specimens are more or less damaged. Some of the fragments are undoubtedly refuse from the manufacture of implements. The technique of splitting seems to have been rather advanced as is evidenced by the chisel Pl. 2: 5. The row of small dents near the hole of a rectangular stone knife seem to have been bored in order to facilitate splitting.

Most of the items are smoothed or polished. The material is mainly dark grey and fine-grained. In structure it resembles medium hard slate. White limestone is used in two cases and light grey jade for a chisel.

Axes.

1 complete item and 4 fragments. Pl. 1: 1.

Axes with their edge ground from both sides in a more or less symmetrical way are represented by four fragments of middle-sized axes and one complete item. They are all smooth and either completely or only partially polished.

The shape of the axes of ordinary size may be exemplified by the two largest fragments without neck. One of them has an almost rectangular shape and likewise a rectangular cross-section and slightly rounded surfaces; more than half of the surface has been thinned out by chipping. The length in its present condition is 10.5 cm and the breadth about 7 cm. The other fragment, Pl. 1: 1, is somewhat flatter, with an almost rectangular cross-section, and tapers towards the end; one of the narrow-sides is slightly rounded, whereas the other is bevelled. Length in its present condition 10.8 cm, breadth 5.5—4.6 cm and thickness 1.3 cm.

A small, complete axe has a rectangular (almost square) cross-section, flator slightly rounded surfaces and is somewhat broader at the edge. The margin on both sides is bevelled. Length 7.7 cm, breadth 1.8—2.2 cm and thickness 1.5 cm.

Identical or analogous items were found in the localities 3, 6, 8, 10, 11, 13, 14, 19 (1), 21, 22, 26, 27, 32, 33, 35—37, 39, 42, 47—49.

Adzes.

7 complete items and 11 fragments. Pls. 1: 2—7, 12, 2: 1.

Three of the best adzes have already been published (*Res.* Pl. 44: 1, 3, 8). The adzes are of various sizes and may be divided into six groups:

1. Fragment of a large adze with rectangular cross-section. Well polished. Thickness 2 cm.
2. Two complete items and five fragments of medium-sized adzes. The shape of the adze is either rectangular (Pl. 1: 4) or straight-sided and widening towards the edge (Pl. 1: 3). All the items are more or less polished. The length of the two complete adzes is about 11 cm (Pl. 1: 2, 3); breadth of the edge in this group 3.5—6.3 cm; thickness about 1 cm.
3. Three almost complete small adzes, oblong, flat with broad edge. The cross-section is rectangular. The shape varies: one item has almost parallel sides, another (Pl. 1: 12) is somewhat broader at the edge and the third (Pl. 2: 1) tapers strongly towards the neck. Fairly well polished. Length 7.5—6.7 cm, breadth of the edge 2.9—2.4 cm and thickness 1 cm.
4. Two almost complete small adzes are almost oval in cross-section and have parallel sides but taper slightly towards the edge. Not fully polished. Length 9 and 8.3 cm, breadth of edge 1.6 and 1.4 cm, thickness 1.5 cm.
5. Two complete small adzes are short and have nearly parallel sides except at the almost straight edge, where they are slightly broader. The cross-section is almost rectangular. One of the items (Pl. 1: 5) has slightly curved surfaces, whereas

- the other (Pl. 1: 6) is concavo-convex (convex on the bevelled side). They are of dark brown, fine-grained rock with unctuous surface. Length 5.8 cm and 5.1 cm, breadth 3.3–3.7 cm and 2.9–3.5 cm, thickness 1.2 cm and 0.9 cm.
6. Three complete small adzes, short, broad at the edge and tapering towards the neck. They are coarsely cut and only partly polished. They are made of dark grey or brown rock with unctuous surface. Length 7.5 cm, 6 cm, 4.5 cm (Pl. 1: 7). Breadth of the edge 3.8 cm, 3 cm, 2.6 cm, thickness 1.6 cm, 1.3 cm and 0.9 cm.

Identical or analogous items in localities 8, 10, 11, 14, 19 (1), 21, 27, 30, 32–37, 42, 46.

Fragments of axes or adzes.

9 items. Pl. 1: 9, 10.

We have nine large items of various sizes without edge or (in four cases) neck. The shape and degree of finish vary considerably: five fragments (e. g. Pl. 1: 9) have a slightly rounded, rectangular cross-section and are somewhat broader at the edge; one fragment has an almost D-like cross-section and tapers towards the edge; one coarse fragment has an oval to D-like cross-section and tapers towards the edge; two fragments are well polished, flat and slightly broader at the edge.

They are all of a fine-grained, dark grey rock except for a well-polished neck fragment of white marble (Pl. 1: 10). The largest item is more than 15 cm in length; the thickness of the two flat last-mentioned fragments is 1.3 cm and 1.7 cm respectively. All the other items are 2.3–3.7 cm in thickness.

Refuse of axes and adzes.

19 items.

All items except three are almost entirely polished and of a dark grey, fine-grained rock. A few items may have been used as scrapers or knives.

Chisels.

4 complete items and 10 fragments. Pl. 2: 2–9.

These items form a rather heterogeneous group, which is closely related to the small axes or adzes. From the latter they are distinguished by their narrow and elongated shape. They may be square, rectangular, rounded square, D-like or oval in cross-section.

Ten or eleven items are adze-edged (the edge being usually slightly rounded); the few remaining ones (Pl. 2: 2–4) are ground from both sides.

Three of the longest adze-edged items (with rectangular cross-section, e. g. Pl. 2: 5) have evidently been manufactured by cutting a narrow strip from a broader large adze, the cut rim being left unpolished.

Most of the chisels are made of the aforesaid dark grey, fine-grained mineral, but two items (e. g. Pl. 2: 6) are of greyish brown minerals, and another (Pl.

2: 2; *Res.* Pl. 73: 5) of light grey, well-polished jade, which is also the only specimen of jade from the Ma-kia-yao site.

One of the largest chisels (with D-like cross-section, Pl. 2: 7) is $11.5 \times 1.8 \times 1.5$ cm, a medium-sized chisel (with oval cross-section, Pl. 2: 8) is $8.4 \times 1.6 \times 1.3$ cm. Two items (with an almost square cross-section), one with axe-edge (Pl. 2: 4) and the other with adze-edge (Pl. 2: 9), are small: 5.8 cm and 6.2 cm respectively in length and 0.6 cm in edge breadth.

Identical or analogous items in localities 2, 8, 11, 14, 21, 27, 32, 33, 35, 42, 44, 46, 48.

Rectangular stone knives.

2 complete items and 14 fragments. Pl. 2: 11–14.

They are not illustrated in *Researches*. Most of the knives (12 items), of types which are also represented in pottery, are made of medium-grey slate or of a slate-like mineral, whereas the rest are of a dark grey, somewhat harder mineral.

All the knives except one are single-edged with the edge ground from both sides. All have one hole (or some may originally have had two holes), conically bored from both sides. Except in two cases the hole is in the centre, but somewhat closer to the edge than to the back (probably on account of the wear and tear of the edge).

The shape is never entirely rectangular: the short sides may not be entirely parallel and they may be slightly outward-curving or inward-curving. Two knives have a distinctly inward-curving back like the Lo-han-t'ang knife in *Res.* Pl. 164: 3.

The largest complete knife (Pl. 2: 12) is 8.5×4 cm. The thickness of the back varies from 6 mm to 3 mm.

Rectangular stone knives were found in localities 3 (1, 4, 5), 6, 7 (1–3), 8, 11, 14, 19 (1–2), 21, 22, 24, 29, 30, 32–37, 44, 46, 47. For similar «knives» made of pottery, see below.

Stone knife with lateral notches.

Pl. 2: 15.

This specimen is formed from a flake of very hard grey rock. The back is thick; the cutting edge is very sharp. Lateral notches for the purposes of attachment. Length 7 cm, thickness 1 cm. Such knives with lateral notches were found in localities 3, 8, 11, 15, 28, 30–36, 44–46.

Perforated fragment of a hoe-blade.

Pl. 1: 11.

A small part of the neck of a blade, probably like one of the «axes» in *Res.* Pls. 17–18, is made of limestone and its edge has undoubtedly been broader than the neck. The hole is 1.5 cm in breadth and bored in the centre closer to the

neck. The soft material indicates that the implement has been used as a hoe; several agricultural hoes, attributed by Andersson to »the Yang-shao culture», are also made of limestone (see *Res.* Pl. 23). The breadth of the neck seems to have been around 8.5 cm. The thickness is there 1 cm and in the region of the hole 1.6 cm.

Similar specimens in localities 11, 14, 32, 35.

Grindstone.

Pl. 3: 1.

It is a rounded stone of a somewhat flattened egg-shape, with longitudinal fluting. The length of the fluting is about 7 cm, the breadth and the depth 1.3 cm and 0.5 cm respectively. The fluting is glossy, whereas the rest of the stone is unpolished grey. The size of the object is approximately $7.5 \times 6 \times 3.5$ cm.

Cutting implements made of refuse of axes or adzes.

3 items.

The three items are small and differ in shape. The largest specimen is a clumsily pointed pricker (?) of dark grey stone, which still shows traces of polish; the tip is polished, and it is at least probable that this is a piece of refuse converted into a tool. The »pricker» is 8 cm in length and 2–3 cm in thickness at the end of the handle. The point is about 0.5 cm in breadth.

Another implement belonging to this category is an axe-edged chisel of rectangular form. It is 3.7 cm in length, about 0.7 cm in thickness and 1.2 cm at the edge.

A third item is a small peg-like miniature chisel with triangular cross-section and straight edge ground from both sides. Length (fragmentary piece) 4.8 cm, breadth of the edge 0.3 cm.

Rings.

40 items. Pls. 2: 16–21, 3: 2–4.

Andersson has reproduced seven of these stone rings (*Res.* Pls. 47: 1–5, 48: 1, 6). Tentatively he refers to one of them (Pl. 2: 16) as a »hair ring» (*Res.* Pl. 47: 1, Fig. 117, p. 266). The size of the latter and a few other rings indicates, however, that they may have been used as bracelets. In our material we have three complete rings, 24 fragments and 13 half-worked rings or refuse of rings. Most of them are of not very hard, dark grey or black rock (29 items, the refuse and 12 incomplete rings inclusive), whereas 4 are of white marble and 7 of a greyish white, rather porous and soft mineral. Only a few of the rings are well polished, whereas most of them show traces of scratches from rough polishing.

The cross-sections are of five kinds: triangular (13 items, e. g. Pl. 2: 17); rectangular (1 item and the 13 incomplete rings or refuse, Pl. 2: 18); semi-circular or at least with rounded outside (8 items, Pl. 2: 19, 20); pointed-oval (1 item);

convex inside and concave outside (i. e. the outside of the ring fluted) (2 items, Pl. 2: 16, 21).

All the rings (except one) with triangular cross-section are slightly planed off, three on one side and nine on both sides (cf. the cross-section of *Res.* Pl. 47: 5). Moreover, on one specimen (the ring Pl. 3: 4) the planed-off top surface has been slightly fluted, the fluting being glossy.

The diameter of the rings is at the most 10 cm (the same as that of the rings of clay). Thickness 0.6—1.0 cm, and breadth 0.7—2.0 cm. Rings of similar types: localities 4, 8, 10, 14, 17, 32, 34, 37, 44, 46, 48.

Miniature cutting implements of slate.

6 items. Pl. 3: 6, 7.

In this group we may distinguish between three types of implements.

The first type consists of two short rectangular thin slabs with convex edge, one adze-edged and the other (Pl. 3: 6) axe-edged. Length 5.5 cm and 3.7 cm, breadth 3.3 cm and 2.4 cm, thickness 0.3 cm and 0.4 cm.

Another type is represented by two specimens, one complete, the other fragmentary. The former is a long slab, somewhat broader at one end. Its ends are ground into a wedge-like sharp edge. Its broad end is convex. The complete specimen in Pl. 3: 7 is $6.5 \times 1.1 - 0.5 \times 0.3$ cm.

The third type, represented by two complete items, has a pointed neck, though the sides are nearly parallel, only slightly broadening towards the edge. One item has the end ground axe-fashion, whereas the edge of the other is blunt (wear and tear?). The two objects are bevelled on the sides. Length 4.3 cm and 5.1 cm, breadth 0.9 cm and 1.0 cm, thickness 0.3 cm.

Miniature flaker of slate.

One complete small object of trapezoid shape is made of thin slate. It has no sharp borders. $4 \times 2 - 3$ cm, thickness 0.3 cm.

Adze-like scraper (?).

Pl. 2: 10.

An asymmetrical object resembling an adze, or a knife of the rectangular type, but thin and convex, has an obliquely curved edge. Length 6.2 cm, breadth of the centre 3.5 cm, breadth of the edge 2.4 cm and thickness 0.6 cm.

Asymmetrical knives (or scrapers).

4 fragments. Pl. 2: 22, 23.

Probably all four fragments have been oblong with straight sides and tapering towards one end; all the items have the ends broken off. Two fragments (one shown in Pl. 2: 22) are made of the common dark grey, fine-grained mineral, the

third fragment is of a medium-hard, slaty, greyish brown mineral, and the fourth (Pl. 2: 23) is smooth and of light sandstone. The item of sandstone has a convex, blunt edge (thickness $1-1\frac{1}{2}$ mm). It has probably not been used as a cutting implement but as a grinder (of grooves?). The edges are, on the whole, straight and have invariably been ground from both sides. The largest item, Pl. 2: 22, is 12.2 cm in length, 5 cm in breadth and 1.7 cm in thickness (at its maximum). The fragment of sandstone is $10.5 \times 5-3.5 \times 1.7-1.3$ cm.

A similar specimen was found in locality 44.

Pestles (?)

4 items. Pl. 3: 8-10.

These four smooth almost complete items may be divided into three types: one (Pl. 3: 8) is a round staff with one end rounded (breadth 2.7 cm), the other flat (br. 3.3 cm); the length is 10.3 cm. Another item (Pl. 3: 9) is long, thin and round but somewhat tapering from the centre towards the convex ends, which have a breadth of 3.3 cm and 3.8 cm respectively; the length is 15 cm. The other two items have a flattened oval cross-section, and are cone-shaped with one narrow, convex end and one broad, flat end; the long and thicker item is 12 cm in length and 6.8×3.7 cm; the other item (Pl. 3: 10) is 9 cm in length and 3.7×1.5 cm.

Similar pestles in localities 3 (1, 2), 7 (2), 10, 11, 27, 32, 35, 37, 45.

Perforated oval blade

It is difficult to determine the use of a 12.5 cm long, almost oval, flat object with a hole bored at the broken narrow end. The cross-section is flattened oval, the curved broad end is oblique and smooth. Breadth 8 cm, thickness 2.6 cm and thickness at the fracture 0.4 cm.

Spindle-whorls

4 complete items and 2 fragments. Pl. 3: 11, 12.

All the items are simple, flat and smooth. One of the fragments is thin (0.4 cm) and is probably a flake. A complete item (Pl. 3: 12) has a central unfinished hole bored from both sides; the hole was made with a tubular drill. The items are of marble (1 item), limestone (2 items), sandstone (1 item) and a dark grey fine-grained mineral (2 items). The diameter varies from 6 cm to 4.8 cm, the thickness is generally about 1 cm (1.3 cm to 0.4 cm).

Similar items in localities 8, 11, 14, 17, 21, 30, 32, 33, 38 (bought), 44.

Roughly rounded discs

3 items. Pl. 3: 5, *Res.* Pl. 45: 14.

These discs are 6-7 cm in breadth and 1-1.5 cm in thickness. They have smooth surfaces (one side polished?) and rough edges and they are of a grey, quartziferous sandstone. They may have been used as covers or polishers.

Stone discs of the same type and size in localities 7 (2), 8, 11, 14, 15, 17, 32.

Pellets.

18 items. Pl. 3: 13—17, *Res.* Pl. 45: 12.

This group consists of three types of spherical, solid stones of varying size and shape. There is only one polished item, Pl. 3: 13, namely a small, slightly oblong stone with oval cross-section, made of grey, fine-grained mineral; it measures 2.7×2 cm. It may possibly have been used as a kind of polisher.

Another type is represented by the largest ball, Pl. 3: 14, slightly drawn-out and circular in cross-section. It is made of a greyish brown mineral, smooth but not polished. It is 8 cm in length and 7 cm in diameter.

The majority of the balls (16 items) are more or less spherical pellets, with a rough surface, and are made of a mostly greyish white mineral; it is possible that these balls were likewise some kind of polishers.

Diameter: 6.6 cm (1 item), 5 cm (1 item), 4.5—2.5 cm (11 items), 2.4—2 cm (3 items).

Rough stone pellets of moderate size in localities 3, 4, 8, 10, 14, 19 (1), 22, 30, 32—34, 37.

Pendants (?) with hole for suspension.

3 items. Pl. 3: 18—20, *Res.* Pl. 44: 5.

Two of the objects (which are both nearly complete) are almost oval and flat, with a hole near the end. One item (Pl. 3: 18) is small and flat and quite smooth; its hole is 1.1 cm in breadth, and the measurements are about $3 \times 2.5 \times 0.3$ cm. Another item (Pl. 3: 19) is crudely chipped (the borders and one surface), the one surface being slightly convex and the other almost flat; the diameter of the hole is 0.6—0.7 cm; it measures $4.6 \times 4 \times 1.1$ cm.

The third item (Pl. 3: 20) is of quite a different type: it is an elongated stone with the one surface convex and polished and the other flat; the long sides are somewhat convex. Size: $5.5 \times 0.7 - 1.1 \times 0.3$ cm; diameter of the hole 0.4 cm.

Drill (?) in the shape of a sharp-pointed pin.

Pl. 4: 1.

A short polished pin with pointed end; it is probably complete. The cross-section is almost circular to a point about 1 cm from the other end; the latter has an almost square cross-section and has probably served as a tang. It is made of a fine-grained, black, unctuous mineral; the point is glossy (through wear and tear?), the rest is smooth with delicate traces of the polish. Length 4.7 cm, diameter of the main body 0.5 cm, diameter of the tang 0.2 cm.

Miscellaneous.

3 items.

A small, rounded, flat disc has the one surface convex and the other flat. The former is glossy. Width 2.6 cm, thickness 0.6 cm.

A small, uneven but partly rounded fragment of slate is probably a scraper. Width about 6 cm, thickness around 0.7 cm.

Another fragment, which is asymmetrical, is well polished and has slightly outward-curving sides; it is made of the dark grey fine-grained mineral that is frequently met with. On one surface there are four unfinished bore-holes, 0.4 cm in breadth, whereas the other surface has two. Width 4.5 cm, thickness 0.7 cm.

Ornaments of marble.

2 complete items. Pl. 4: 2, 3.

These two items are well worked objects of white marble and are of about the same size. One, Pl. 4: 2, is a 0.8 cm thin disc, 2 cm in breadth. Not quite circular. The other item (Pl. 4: 3) is a small rounded, multilateral object with an almost D-like cross-section, of the peculiar shape shown in the photograph. Length 1.9 and breadth 1.8 cm, thickness 0.9 cm.

It is possible that these two objects have been used as labrets. The disc has its parallels in the Kansu material (localities 14, 32) whereas the second object seems to be unique.

BONE ARTIFACTS.

Small rings.

3 complete items and 1 fragment. Pl. 4: 4—6.

Judging from the size and the shape, two of the three complete rings, reproduced in *Res.* Pl. 46: 16, 18 (one being shown in Pl. 4: 4), may be finger-rings. Their outer diameter is 2.2 and 2.0 cm respectively. The inside is plane and the outside convex (D-shaped in cross-section). The height is 4.0 and 4.5 mm and the thickness 3.0 and 2.5 mm. The surface is well polished.

The third complete ring (Pl. 4: 5) is of the same size but it is oval (outer diameter 1.7—1.5 cm). It has a thinner wall and is of cruder manufacture than the two first-mentioned rings.

A fourth ring (Pl. 4: 6) is similar to the preceding ones but is broken and has opened up.

Small and more or less flat objects, probably ornaments.

8 items. Pl. 4: 7—13.

There are four perforated plates. One (Pl. 4: 7) is an extremely small D-shaped piece with a 0.2 cm hole in the center close to the border. The diameter of this specimen is 0.8 cm. The second, a larger oval, somewhat thicker piece (Pl. 4: 8) has a central hole (diameter 3.5 mm), smoothed surfaces and bevelled border. Length 1.8×1.1 cm, thickness 0.3 cm. A third item (Pl. 4: 9) is a fragment (about 1/3) of a thin disc; it is somewhat thicker at the inner border (2 mm). The outer diameter is about 7.5 cm and the inner diameter about 1.5 cm. The fourth item

is an elongated and bent plate perforated at both ends and with an extra hole close to one edge (our Pl. 4: 10; *Res.* Pl. 45: 15). The inner border is sharp. Tapering towards one end. Distance from end to end 8 cm. Breadth 1.8 cm. Probably a pendant; made of the tusk of a boar.

A couple of vaulted plates (Pl. 4: 11) are almost identical. They are approximately D-shaped and are of uniform thickness: 2 and 3 mm respectively. Size 4×3.3 cm.

A small triangular plate with two tenons (Pl. 4: 12) has already been reproduced by Andersson (*Res.* Pl. 45: 13). The length of the tenons is 0.6 and 2 cm respectively. It is very thin, more so at the point. Length (including the tenons) 4.5 cm.

A segment cut out of a thick cylindrical bone (our Pl. 4: 13; *Res.* Pl. 45: 7), is probably not a complete artifact. It is of a rectangular shape with one surface convex and the other flat with two deep parallel grooves. $4 \times 3.5 \times 0.9$ cm.

Carved slats and sticks, probably ornaments.

4 items. Pl. 4: 14–16.

A round pointed pin with a carved head (Pl. 4: 14) is one of the most beautiful specimens in our bone material. It is well polished and is segmented 8 mm and 15 mm respectively from the base. It is slightly thicker in the central part (0.4 cm). Length 9.4 cm.

The carved top (Pl. 4: 15) of a thick round pin is 3.8 cm in length and 0.9 cm in diameter at the base. Well polished. The back is planed from the top of the ornamental knob to a point 1.9 cm lower down. The top is almost D-shaped in cross-section.

Similar specimens, more simply worked in localities 19(1), 34.

An oblong, lanceolate pendant (?) (Pl. 4: 16), well polished, has a D-shaped cross-section; one end is blunt, the other has a small knob, probably for attaching a string. The specimen is slightly bent. Length 6 cm. Greatest breadth 0.6 cm. Thickness 0.3 cm.

The carved top of a narrow slat has one of its surfaces flat and the other convex, most strongly near the top. The knob is semi-circular in cross-section. Length 3.2 cm. Thickness 0.3–0.1 cm.

Arrow-heads.

9 items. Pl. 4: 17–18.

Nine triangular arrow-heads with tang have flat or slightly convex surfaces. The base is at right angles or even at obtuse angles to the tang. All of them have a well smoothed blade but a roughly worked tang.

Seven of the arrow-heads are long (8–9 cm, see for instance Pl. 4: 17) and two are short (5.3–6 cm, e. g. Pl. 4: 18). Two of the long ones are fragmentary. The base-line of the blade varies from 0.6 cm to 1.1 cm.

According to Andersson, five triangular arrow-heads were found in the largest gully pertaining to this site.

There are four short pointed objects, which are probably arrow-heads. They all differ in cross-section. One item with pointed-oval cross-section and with one surface strongly convex is short and has the tang broken off; it has a polished surface and is well preserved. The length of the blade is 4 cm (originally probably 0.5 cm longer); the base is 1.1×0.7 cm. Total length 5.3 cm. Another item is narrow, almost rhombic in cross-section, and has blunt edges. The length of the head is 5.5 cm. Total length 6.7 cm. The base is 0.9×0.6 cm. A third item has a trapezoid cross-section. The length of the head is 5 cm. Total length 6.5 cm. The thickness of the base is 0.7×0.9 cm. The fourth, an oblong specimen, is approximately flat (with a rectangular cross-section), and is in poor condition. Total length 7.3 cm. Thickness about 0.8×0.5 cm.

Bone arrow-heads with tang in localities 7, 8, 13, 32, 34.

Fish-hook.

Pl. 4: 19.

The main part of the fish-hook (*Res.* Pl. 46: 9) is preserved, all but the tip. It thickens towards the attachment end, which has a groove 1 cm down for attaching a string. Length 4.8 cm.

One bone fish-hook (?) from each of localities 17, 34, 36.

Sewing-needles.

49 items (12 with eyes). Pl. 4: 20—23; *Res.* Pl. 46: 10—13.

The majority of this material consists of fragments without eyes (34 items), whereas three are undoubtedly unfinished sewing-needles. They have no eye but in other respects are complete (length 4.5 cm, 2.7 cm and 6.2 cm). There are only five complete sewing-needles with eyes, whereas seven other needles with eyes have lost their points.

The complete sewing-needles (e. g. Pl. 4: 20—23) are 9.5—3.2 cm in length, but judging from a fragment without a point but with an eye (length 10.1 cm) there have also existed longer ones. The needles are usually flattened in the region of the eye. The eye is usually circular but sometimes oval. The diameter is 2 mm at its maximum.

Similar items in localities 3 (2), 7 (3), 8, 10, 11, 13, 14, 30, 32—34, 36.

Ornamental (?) segments of oval rings.

4 items. Pl. 4: 24—26.

In *Researches* (p. 92, Pl. 46: 19) Andersson describes the first of these specimens (our Pl. 4: 24) as »part of a bone ring with a hole at each end». This segment has worn ends and is D-shaped in cross-section (the convex side is outwards); it is about 1 cm in height and 0.5 cm in thickness. The length of the object from end

to end is about 4 cm. The smoothed ends and the irregular shape of this segment indicate that it can hardly have been simply a broken-off part of an oval ring. The next object, Pl. 4: 25, is also oval and perforated. Andersson mentions it in connection with his description of the former specimen. It is, however, of a different type: unlike the former object, the two ends are broken off. One end is thin and the cross-section is pointed oval. There are two holes, which have served to repair an old fracture. It is 5 cm in length between the ends, 0.7 cm in height and about 0.3 cm in thickness. A third object (Pl. 4: 26) resembles the one just described but has no holes.

A relatively thick segment of an oval ring, 4 cm in length, has a D-shaped cross-section. It is 1 cm in height and 0.7 cm in thickness. In all probability it has not been used as a bracelet, being too small for that purpose.

A segment of an oval ring in locality 32.

Chisels.

9 items. Pl. 5: 1—6, 6: 5, 14.

The following five types of chisel-like objects with a cutting-edge are represented:

a) Broad flat chisels with adze-edge (3 items); two of them (Pl. 5: 1, 2) are c. 11 cm long and slightly broader at the edge, about 3 cm in breadth, one surface nearly flat, the other surface slightly convex; the third object (Pl. 5: 3) is smaller (though reproduced in a larger scale): length 6 cm, breadth of edge about 3 cm.

b) Narrow, flat chisels with adze-edge (3 items, Pl. 5: 4, 5). One surface (bevelled or not) is flat, the other slightly convex. Somewhat tapering towards the edge. Length 14.6 cm, 7.4 cm and 5.8 cm, breadth of edge 0.8 cm.

c) Chisel oblong in shape and with oval cross-section and outward-curving adze-edge (Pl. 5: 6). Length 13 cm, breadth of edge about 1.1 cm, thickness (at the base) 2.0—2.6 cm.

d) Chisel oblong in shape with axe-edge at the broad end and adze-edge, at right angles to the former, at the narrow end (Pl. 6: 14); flat, one surface having bevelled margins. Length 14.5 cm, breadth of axe-edge 2.2 cm, of adze-edge 0.6 cm.

e) Small chisel with slightly convex surfaces; axe-edged. Length 6 cm, breadth (at the head) 1.1 cm, breadth of edge 0.4 cm = maximum thickness of the object (Pl. 6: 5).

Chisel-like implements in localities 3 (1), 7, 10, 11, 13, 14, 29, 30, 33, 36, 37, 47.

Fragmentary pick (?)

Pl. 6: 13.

Well polished (with a natural furrow, 7 cm in length), broken off, semi-circular cross-section, outward-curving adze-edged tip. Length 18.3 cm, breadth (at the base) 1.5 cm, thickness 0.6 cm.

Crude awls.

12 complete specimens. Pl. 5: 7, 8.

All the examples have a natural furrow and a trochlea serving as handle, except in one case. A few are rounded, but most of them are more or less flat. Length 18—5.5 cm, breadth (at the base) 4—1 cm. Similar specimens in localities 3 (1), 6, 7 (2, 3), 8, 10, 11, 13, 14, 17, 19 (1), 22, 28, 30, 32—36.

Pointed flaker-blades.

3 complete items.

More or less finished, flat at the triangular tip. The shapes vary: one item has a short broad blade with a trochlea as head; length 10 cm, breadth 3.5 cm and thickness (close to the tip) 0.4 cm. Another has one margin almost straight, the other gently curved; length 11.5 cm, breadth 1.7 cm and thickness about 0.6 cm. A variant of the latter is the flattest and the best manufactured item of them all. Length 11 cm, breadth (at the base) 1 cm and (at the centre) 1.5 cm, thickness 0.3—0.4 cm.

Similar specimens in localities 8, 10, 11, 13, 14, 30, 32—34, 46—48.

Crude awls or flaker-blades.

13 items. Pls. 5: 9, 6: 12.

They are all almost in the natural state of the bone, only slightly worked. The two longest items are cleft hollow bones, one of them (Pl. 5: 9) with a sharp tip. Length 14.5 cm and 12 cm, diameter (at the base) 0.7 cm.

Of the other items nine are more or less flat (6: 12), and two have a square cross-section with rounded corners. Length 12.5—6.5 cm, breadth 1.5—0.8 cm.

Awls or flaker-blades with flattened top.

8 complete items. Pl. 5: 10, 14, 15, 19.

Although a few of the awls already described have a slightly flattened top, this flatness is a more dominant feature in this group of implements. They are mostly well polished. The shapes vary, Pl. 5: 10 being the most common. Length 13.6—6.4 cm, breadth (at the base) 1.5—0.5 cm.

Awls with broadened top.

5 items. Pl. 5: 11, 18.

Three different types are represented:

a) Two complete awls, well polished, with oval cross-section, and slightly flattened towards the broadened top. One awl, which is bored through just below the top, is 9 cm in length, and 0.5 cm in thickness; the other awl is slightly thinner and broadens towards the 0.5 cm thick top; it is 10.5 cm in length.

b) Two complete objects, flatter (pointed slats), narrower, cruder than the preceding, with a slightly rounded broadened top. Length 14.3 cm (Pl. 5: 18) and (Pl. 5: 11) 8.5 cm, breadth (at the base) 1.6 cm and 0.9 cm, thickness about 0.4 cm.

c) A fifth awl lacks a tip, and has circular cross-section. It is well polished. Length 7 cm. Breadth (at the base) 1 cm, thickness 0.6 cm.

Similar specimens in locality 19 (1).

Awls or flaker-blades pointed at both ends.

3 complete items. Pl. 6: 1.

These objects differ in shape:

a) The first has a flattened oval cross-section, and is polished. Length 12 cm, breadth 0.6 cm, thickness 0.3—0.35 cm.

b) The second has the shape of a cleft tube, and is somewhat crudely made. Length 11.5 cm, 0.7×0.4 cm.

c) The third is round (Pl. 6: 1) and polished. Length 9 cm, diameter about 0.5 cm.

Combined «awl-and-chisel» implements.

Pl. 6: 2.

Three small implements, rather poorly made, fairly flat. One end is pointed and the other more or less axe-edged. Length (Pl. 6: 2) 8.8 cm, 5.7 cm and 5.6 cm, breadth 1.2 cm, 0.7 cm and 0.6 cm, thickness 0.6 cm, 0.4 cm and 0.3 cm.

Shorter implements pointed at both ends.

2 items. Pl. 6: 3.

One object (Pl. 6: 3) is a thin and bent slat of almost uniform breadth (around 0.8 cm): it has triangular, pointed ends (bevelled on the concave side). Length 8 cm, thickness 0.4 cm. The other object is a small peg with triangular cross-section, axe-edged at both ends. Length 5 cm, thickness 0.3 cm.

Short flaker-blades of triangular shape.

Pl. 6: 4.

There are two complete items, poorly smoothed and of almost the same size and shape. One (Pl. 6: 4) has a transversal furrow near the top, close to which there is a round hole 0.45 cm in diameter; one surface is slightly convex and the other flat. The tip is blunt. Length 6.3 cm, breadth (at the base) 1.7 cm. The other object is almost flat, has no furrow or hole, is of uniform thickness and better made than the former. Length 6.1 cm, breadth 1.7 cm.

Long, rounded sticks pointed at one end.

About 15 items. Pl. 5: 17.

All the specimens except one are well polished.

There is only one item with the thickened top preserved; this stick is slightly bent. The largest one is about 11 cm long. The diameter of this and 4 other specimens is about 2.5 mm, of the others (e. g. Pl. 5: 17) about 4—5 mm.

Similar specimens in localities 3 (4), 6, 8, 10, 11, 13, 14, 22, 29, 30, 32—34, 36, 46—49.

Short sticks pointed at both ends.

6 items. Pl. 6: 6—8.

It is difficult to know whether these pieces are parts of drills, arrow-heads or awls with a tang. Two items seem to be complete and two more still have their tips. All taper more or less towards the ends, which are sharp-pointed. One fragment has a central furrow dividing the polished and the crudely carved parts. Pl. 6: 6: length 5.8 cm, diameter 0.7 cm; Pl. 6: 7: length 6.5 cm, diameter 0.7 cm; Pl. 6: 8: length 9.7 cm, diameter 0.7—0.8 cm.

Short awl with round cross-section.

This polished awl is one of the best manufactured objects among the bone material. It is evenly tapered from the flat top towards the sharp tip. Length 5.5 cm, diameter (at the top) 0.6 cm.

Crudely worked short awl.

Pl. 5: 13.

Probably raw material for a short awl like the preceding: Square cross-section (the base 0.5×0.4 cm). Length 4.8 cm.

Short slat of drawn-out lozenge shape.

Crude and possibly unfinished. The sides are straight. Length 5.3 cm, breadth 0.9 cm.

Drills (?).

5 items. Pl. 6: 9.

Three of these small objects are smoothed. The tip is somewhat rounded, whereas the other end (a tang?) is wedge-shaped. Length 4.5 cm and (2 items) 3.8 cm, breadth about 0.5 cm.

Two other specimens are of the same size and shape as the preceding, except that they lack the wedge-like part. They may be unfinished implements of the kind just mentioned. Length 4.6 cm and 4.3 cm.

Short pointed pegs with flat, widened top.

2 items. Pl. 5: 12.

The objects are almost identical. The cross-section is flattened oval just beneath the top. Length 4.3 cm and 4.1 cm. Breadth of the top 0.8 cm.

Implement with lanceolate blade.

This fragment consists of a flat, lanceolate blade which is set off at the base by inward-curving margins narrowing into a tang (now broken off). The tip is slightly bent, and both surfaces are somewhat convex and smoothed. Length 5 cm, breadth (at the base) 1 cm, thickness 0.4 cm.

Pointed implement with tang.

Pl. 6: 10.

The main part of the object resembles the blade of the triangular arrow-heads in that it has a nearly triangular cross-section. One surface is flat (except at the tip), whereas the other surfaces are convex. The tang has a round cross-section and is not so well made as the main part of the object. Length of the blade 5.5 cm and of the tang 2.4 cm. Breadth (at the base) 0.9 cm.

Awls with long handle.

2 items. Pl. 6: 11.

The two specimens are in poor condition, but seem to be complete. The handle of one item (Pl. 6: 11) has a rhombic cross-section and is almost rectangular in shape. It is 4 cm long and about 1 cm thick. The tip is shorter and rounded. The second object has an irregularly triangular cross-section, and it is oblong with outward-curving sides. One surface is convex and glossy. The handle of this piece is 6.5 cm in length. The tip, which is even shorter than that of the preceding one, is a little blunt and it is polished.

Flat slats.

4 items. Pls. 5: 16, 6: 15, 16, 17.

All the specimens except the large 6: 16 are very carefully polished. Length 9.2 cm, 11.8 cm, 23 cm, 6.7 cm.

POTTERY ARTIFACTS.

Crescent-shaped ornaments.

36 fragments. Pl. 7: 1—5.

In *Researches* Pl. 48: 2—4 Andersson reproduces three flat, crescent-shaped clay objects (our Pl. 7: 1—3). Their dentated dorsal margin makes them look like the horn of an ibex (*Res.* p. 91). There are no complete specimens; judging from *Res.* Pl. 48: 4 and our Pl. 7: 1, however, the original shape may in some cases have been that of a C.

All the specimens are made of a fine pure, fired clay; the colour is mostly grey (light or dark grey, or greyish brown), three items are buff-coloured. The surface is polished, sometimes even glossy.

Most of them are fairly flat on the one surface and slightly concave on the other. Four fragments (e. g. Pl. 7: 2, 3) have a deep dorsal furrow, and two specimens (one in Pl. 7: 4) show how the dorsal indentation continues into ornamental scores running obliquely towards the opposite side. The distance between the ends has probably not exceeded 10 cm; most items seem to have been even shorter. The breadth varies between 1 to 2 cm and the thickness of the inner margin is usually 0.6 cm (or at the most 0.8 cm).

Hooks.

6 fragments. Pl. 7: 6, 7.

These objects are thick in the upper part, which is broken off in all the specimens. They all (e. g. Pl. 7: 6) have a triangular cross-section, except one (Pl. 7: 7) which has an almost D-shaped section. This latter specimen has the outer side deeply fluted. The width does not exceed 5–6 cm, the breadth varies from 0.8 to 1.3 cm, and so does the thickness.

The paste is grey (almost black in one case), well levigated and free from tempering material. The surface is polished.

Rings.

About 450 fragments. Pls. 7: 8–14, 8: 1–5.

A few specimens have already been described by Andersson in *Researches* (Pls. 47, 48, 52; pp. 90, 91, 95). Next to sherds, the rings of clay form the largest category of objects from the Ma-kia-yao site. It is difficult to determine their original use; further, it is possible that many of them have served purposes of several kinds, to judge from the frequent occurrence of planed-off specimens. The outer diameter seems never to exceed 10 cm.

Except in a couple of fragments, the paste is well levigated, free from tempering material and of medium hardness. More than nine-tenths of the rings are light or dark grey, greyish brown or black, whereas the rest are buff like most of the painted pottery from MKY. The surface is polished, sometimes even glossy.

All specimens are plain, except a group of eight fragments, which have dorsal dentation (Pl. 7: 8). There are only a few fragmentary rings with painted décor. The first (Pl. 8: 1) has on the outside a trellised design in black on the buff biscuit; a second (Pl. 8: 2) has on the outside a design of triangles, alternately pointing in opposite directions, painted in dark brown on buff biscuit; a third specimen is 2.9 cm broad and is really a ring-shaped segment of a cylindrical vase neck, with traces of painted décor on buff biscuit.

There are six kinds of cross-section (if we disregard the effect of the planing on the margins). More than three-quarters of the fragments have a triangular cross-section (Pl. 7: 9–11, 13) and, in general, a breadth of 0.6 to 1 cm. The majority of the remaining fragments have a rounded (Pl. 7: 12), semi-circular

(Pl. 7: 14) or oval cross-section. Two items (Pl. 8: 3, 4) have an irregularly square cross-section and show traces of fingers (have they served as specimens for the firing?). A complete grey ring (Pl. 8: 5) has an upright, fairly thin wall with deep fluting along the middle of the outer side. This last isolated case is in grey, all the preceding types occur both in grey and in buff.

Many rings (about two-fifths of the items) are planed off on one or both margins (Pl. 7: 9, 10). In most cases this planing, resulting in narrow, flat surfaces, was done after the firing.

Specimens with a facet on both surfaces are somewhat more numerous than those with a facet on one side only. On a horizontally placed ring the facet is mostly horizontal, but in a few cases it slants towards the inner margin. (Cf. the stone rings treated above).

Clay rings, usually grey, were found in localities 10, 11, 14, 17, 19, 20, 22, 25, 29, 32—34, 42.

Spindle-whorls.

11 complete items, 1 fragment. Pl. 8: 6, 7.

The specimens are mostly moulded and manufactured for this purpose (viz. they are not secondarily made out of sherds, as is the case in many other Chinese prehistoric sites).

Eight of the specimens are buff-coloured, whereas the other four are grey (one of them dark grey). In most cases one surface is slightly convex, the other flat (Pl. 8: 6); the smallest item of the buff specimens, and three of the grey ones are, however, flat on both sides. The holes are placed without much precision. With only one exception (Pl. 8: 6), the whorls are made in a careless manner.

On one surface of a buff item, Pl. 8: 7, there is a simple décor consisting of seven incised lines, running obliquely between the hole and the margin. Measurements of the reproduced items: 6: diameter 6 cm, thickness at the hole 2 cm; 7: diameter 5.5 cm, thickness at the hole 0.9 cm; the diameter of the remaining items is from 6 cm to 4.8 cm, except the smallest item; the latter has a diameter of 3 cm and a thickness of 0.5 cm. Average thickness 1 cm.

Moulded pottery spindle-whorls in localities 3, 8, 10, 14, 22, 32—33, 42, 44.

Perforated sherds.

2 items. Pl. 8: 8, 9.

Two small flat rings or whorls are evidently made of sherds. The larger item (Pl. 8: 8) is in the shape of a ring, the hole occupying nearly half of the surface; the outer diameter is 2.8 cm and the inner diameter 1.3 cm, thickness 0.5 cm. The smaller item (Pl. 8: 9) is about 2 cm in outer diameter; the diameter of the hole is 0.7 cm and the thickness is 0.3 cm.

Rounded sherds.

4 items. Pl. 8: 10.

Of the numerous painted sherds there are only four specimens which have been purposely, though somewhat carelessly, rounded. The two biggest items are cut to a nearly circular shape (diameters 6 and 5 cm respectively); the third item is quite circular (diameter 3.5 cm) and has an evenly cut margin; the fourth specimen (Pl. 8: 10) is the only one with smoothed margin; it is oval and measures 2.4 cm × 1.9 cm.

Similar specimens in localities 2, 4—6, 13, 14, 22, 30, 32, 33.

Pellet.

A small pellet, not quite globular in shape, has probably been sun-dried. The paste is greyish brown and well levigated. The diameter is about 1.5 cm.

Similar pellets in localities 14, 32, 33.

Rectangular knife-shaped scrapers.

2 complete items and 3 fragments. Pl. 8: 11—15, *Res.* 164: 4.

Scrapers of this kind are mainly made of stone, as described above; although our specimens here are hard-fired, they may only have been used for soft material. Three items belong to the common regular shape, generally rectangular but with somewhat outward-curving margins and rounded-off corners; these three examples have evidently had a central hole; the edge is ground from both sides; two have been made out of buff sherds, one of these complete and with painted décor (Pl. 8: 11, reproduced also in *Res.* Pl. 164: 4), and a third item has been made out of a fairly thick grey sherd (Pl. 8: 13). The complete specimen is 7.7 × 3.8 cm in size, and 0.4 cm in thickness. A fourth item (Pl. 8: 14) is slightly bulging as it has been made of a shoulder sherd of a painted, buff vase. A fifth specimen (Pl. 8: 15) is also rectangular, but in place of a hole there are lateral notches. It is crudely cut from a buff sherd and has a blunt edge cut from the convex side. It measures 6.7 × 4.6 × 0.5 cm.

Rectangular pottery knives in localities 8, 11, 19 (1), 26, 32 — painted; and 19 (2), 30, 43, 46, 47, 49 — plain.

Scraper (?)

A small oblong sherd from the flat bottom of a buff vessel has probably been purposely shaped for use as a scraper. It has straight sides and widens towards the edge. Length 6.3 cm, breadth 1.5—2.0 cm, thickness 0.6 cm.

Fragment of a plait.

Pl. 8: 16.

A short, bent object (possibly a segment of a ring with a 7 cm diameter) is 5.5 cm in length, 3.2 cm in breadth and 1.5 cm in thickness. It is plaited with

five grey bars of clay, each with a rounded cross-section. One of the bars ends on the inside, which is flattened. The surfaces on the outside are polished, those on the inside in spots only. It is difficult to tell whether the plaited object is a fragment of a ring or a handle of a large vessel.

Small peg-like object.

Pl. 8: 17.

A short peg-like object of buff paste is 3.7 cm in length, 1.4 cm in diameter. One end is rounded; the main part of the object is of uniform thickness down to the other end, which widens out somewhat and is slanting and irregularly cut. The rounded end is smooth, but the rest is delicately chamfered.

The use of this object is uncertain, but it might have been a polisher; the shape suggests that it may here be a question of a votive phallus.

Rattles.

2 complete items and 1 fragment. Pl. 9: 1—3.

The two complete items (Pl. 9: 1, 3) have already been described and reproduced in *Researches* (p. 239, Pl. 181: 2 a—c, 3) by Andersson, who refers to them as toys.

The paste of all three specimens is buff. As far as we can judge, the thickness of the walls is generally about 0.5 cm. The surfaces are not entirely smooth, but on the whole the objects are carefully made.

One of the complete objects (Pl. 9: 1) and the fragment (Pl. 9: 2) together form one type, with painting in black. The underside is nearly flat with a tendency to convexity, the upper part is vaulted, and the outline of the object seen from above is almost oviform. In four places a hole is bored obliquely through both the upper and the under side, probably for the insertion of a string for suspension. Inside there are at least two rattling balls of unknown material. The décor consists of dotted concentric circles, and at both ends concentric triangles with concave sides. The complete specimen is 6.5 cm in length, 5 cm in width and 3.3 cm in height. The fragment consisting of the bottom and some part of the wall is nearly identical with the former specimen, only it is smoother and better made, and it also has broader ornamental bands.

The third rattle (our Pl. 9: 3; *Res.* Pl. 181: 3) has at least two balls inside and it is unpainted. It resembles a gourd with a spherical lower part and flat bottom; above, it narrows into a somewhat curved neck ending in a conventionalized animal's head. On both sides of a nose-ridge there are a few dents representing eyes and nostrils. The mouth is represented by an almost horizontal line. On either side of the belly there is a small hole, the two holes being on a level with each other. According to Andersson (*Res.* p. 239) the figure represents a monkey. It is 7 cm in height, and its maximum diameter is about 4 cm.

For a rattle of grey ware, a crude unpainted specimen from Lo-han-t'ang, see Bylin-Althin, BMFEA 18, Pl. 25: 4.

Perforated objects.

3 items. Pl. 9: 4.

One specimen has already been reproduced by Andersson in *Researches*, Pl. 181: 1 a — b; it undoubtedly gives the impression of a strongly conventionalized tortoise, as Andersson has already indicated (*Res.* p. 239), but it also somewhat resembles the owl-like head in relief on the wall of a vessel from Tsao-kiao-ts'un in Shansi (*Res.* Pl. 97: 6); the big eyes of the latter are, however, only cavities and not holes as here.

The three objects belong to the same type but differ in size. The paste is grey, fine and glossy. To judge from two specimens their bases have probably formed part of either a larger disc or a vessel wall, but once broken out, they seem to have had their margins rounded off. On this slab-like base, which varies from 0.6 to 1.0 cm in thickness, there is a vaulted upper part about 1 cm thick at the peak and thinning out towards the margins.

From each side of the upper part a hole (1.5—2.0 cm wide) penetrates obliquely towards a hollow centre, which opens out at one end.

The complete specimen, illustrated in Pl. 9: 4 a, b (b showing the object from the open end, a from above), is somewhat smaller than the other two objects and is 6 cm in width and 3.8 cm in height.

MISCELLANEOUS SPECIMENS.

Shell specimens.

Pl. 8: 18.

The collection comprises only two samples of mussel-shells, and one object made of mother-of-pearl. The latter, Pl. 8: 18, is a small pendant consisting of a narrow, slightly bent slat with a pair of notches cut at one end, for suspension. The opposite end is broken off. L. 4.5 cm, br. 0.6 cm.¹⁾

POTTERY WARES.

Painted fine dwelling-site ware.

About 5 000 fragments. Pls. 10—45. Profiles, Figs. 1—3.

These fragments form the main part of the collection from the Ma-kia-yao site. Andersson has already described this group of pottery (*Res.* pp. 93—99, Pl. 49—52, 55) and has also discussed its relation to the Honan ware (the Yang-shao-ts'un ware) (*Res.* pp. 99—104).

¹⁾ Besides the regular artifacts of this site, a few of a patently more recent date have been found, which constitute an immixture made at some later epoch. Such a sample is a 2 cm thick, flat slab of fairly dark green glaze, possibly raw material. Another sample is a small drop-shaped lump of pale green refuse from glazing.

Paste: The vessels are hand-made, but traces of striation (particularly on the interior of vases and jars) indicate the use of the turn-table. There is usually no tempering material. The hardness is medium. The surface is buff (straw-coloured) except in a few cases, when it is in various shades of yellow, red, brown or grey. The core is, in general, darker than the surface. There are, however, a few specimens with the core reddish and the exterior greyish, or vice versa. The average thickness is 0.5 cm with a range of 0.3 to 1.0 cm.

Surface finish: In general the surface is smoothed and polished, sometimes even glossy. This glossiness, combined with the usually brilliant blackish colour of the decoration, is characteristic of this type of Ma-kia-yao ware. A slip occurs in some very rare cases; it is always very thin, is mostly whitish and occurs on the exterior.

Decoration: Except for a few fragments with annular, dentate bands in relief (Pl. 35: 7 and 37: 2) and frequent cases of such bands on ring-handles, the decoration consists of painted designs. The latter will be dealt with in our final chapter. The decoration is mainly black or dark brown, usually brilliant and well preserved, and similar to that of the Pan-shan and Ma-ch'ang ware. Less frequently we meet with a reddish brown or pale red colour. Black and red décor elements are never combined in a pattern; yet they may occur simultaneously on opposite sides of a vessel.

Shape: For particulars of the shape see Figs. 1—3 and Pl. 10: 1—10. Figs. 1—2 show the common regular types, Fig. 3 sporadic types.¹⁾ The majority of the painted sherds belong to plates with high rim, bowls, basins, jars and vases (the latter term refers to various vessels with neck, from large urns down to small bottles). Only about ten vessels have been restored, but the shape of many more can be computed with considerable certainty.

Appendages: Handles are uncommon on plates with high rim, bowls, jars, and small vases (bottles) but frequently occurring on basins (horizontal, dentated lugs) and larger vases (vertical ring-handles, these being painted in a couple of cases, plain in a larger number and only adorned with a wavy relief band in the majority of cases). There is only one instance of a knob-handle (flat top surface painted in dark brown).

Painted buff ware of the MKY type has been found in the localities 1, 3 (6), 4—6, 8, 9, 11, 12 (bought), 13—17, 18 (bought), 19—30, 31 (bought), 32, 34, 38, 40, 42—44, 46, 49. The less frequent varieties of painted fine ware, viz. those of grey, pale red or brown paste have parallels in the localities 4, 8, 11, 17, 19—22, 25, 27, 29, 32, 34, 43—49.

¹⁾ Fig. 1: profiles of plates with high rim (g—i), bowls (j—u), basins (a—f). Fig. 2: profiles of jars (f—j), vases (a—e). Fig. 3 (irregular types): profiles of vase necks (a—d, g—i), necks of jars (e, f, k, l), complete jar (j), rims of bowls (m—o), stem cup (p), lid (q). Fig. 4 (unpainted ware): profiles of bowl (o), bowl of stem cup (?) (n), basins (g, h), jars (a—d, f, i—m), vase (e), leg of a tripod (p).

Painted fine mortuary ware.

7 fragments. Pl. 46: 1—5.

These fragments form a special group adorned with a painted decoration similar to that of the Pan-shan mortuary ware.¹⁾

Paste: The vessels are hand-made. The paste is rather fine, and there are only two fragments with tempering material. The hardness is medium. The colour of the surface varies from light buff to greyish brown, whereas the core is slightly darker. The average thickness is 0.6 cm with a range of 0.5—0.7 cm.

Surface finish: The fragments are well smoothed on both sides and polished on the painted exterior.

Shape: The fragments probably belong to five or six vases of medium size.

Decoration: The decoration of the two largest fragments (one shown in Pl. 46: 1) is similar to that of the Pan-shan vase in *Researches* Pl. 81: 2: straight dark brown lines alternating with saw-toothed reddish brown lines, and, below, a brown wavy line. The decoration is carelessly executed.

Pottery of the Pan-shan mortuary type has been found in localities 8, 19—22, 24, 25, 29, 33, 35, 38, 39.

Plain fine buff or red ware.

155 fragments. Pls. 46:6—16, 47:1—2. Profiles, Fig. 4: b, c, e, o.

The plain fine buff or red ware consists, on the one hand, of sherds most probably deriving from unpainted parts of painted specimens belonging to Group 1 above; on the other hand, sherds having the same paste as Group 1, but indicating certain shapes diverging from those in the said group, and lacking surface polish.

Paste: As already stated, it is the same as in the majority of fragments of Group 1 above, buff (the majority) or reddish (an effect sometimes produced by a slip). On the whole the colour is less varied than in Group 1. There is only one sherd of dark grey paste with a thin buff slip on both sides (a bottom with holes).

Surface finish: Several sherds are polished on one or both sides; this seems also to apply in the case of vessels that were never painted. Most of the items, however, have a smooth, unpolished surface, a minority of these quite rough.

Decoration: There are only two items with any decoration, namely a neck fragment of a small vase (Pl. 46: 10) with a cord-like band in relief on the central bulging part, and a medium-sized neck fragment of a vase decorated with (probably four) groups of oblique grooves on the straight vertical lip.

Shape: Only one vessel, a miniature bowl (Pl. 46: 14), is completely preserved, whereas several damaged specimens have been restored. The 155 fragments consist of 70 rim fragments, 51 side fragments (mainly of jars and vases), 23 fragments of bottoms (3 of which have steam-holes), 9 ring-handles and two (probably horizontal) lugs. The 70 rim fragments are of the following shapes: 25 bowls with

¹⁾ See N. Palmgren, Kansu mortuary urns of the Pan Shan and Ma Chang groups, Peking 1934.

varying profiles (rim straight or curving inwards, only one having a thickened inner margin¹); 15 basins of the same type as those of the first painted group, all except two having straight lip (the lips of the two exceptions curving outwards); 2 plates with high rim, one of them (Pl. 46: 7) restored; two bulging middle-sized jars in certain respects unique in the MKY material (both are wide-mouthed, the rim of the first specimen Fig. 4: c being angular and thinning towards the lip, the rim of the second slightly curved outwards and with a flat lip); 15 fragments of narrow necks of vases (6 of them thin, with flaring lip, a type characteristic of the painted material, the other 9 having shapes seldom met with outside the present group²); the vase, Pl. 46: 13, Fig. 4: e.

Appendages: 15 handles, of which 10 are ring-handles and 5 horizontal lugs. 9 of the former probably belong to vases or jars, and 5 of them are adorned with a wavy band in relief. The tenth ring-handle is unique in the MKY material. It is placed in a vertical position on the lip of a basin and is adorned with a wavy band in relief. 4 of the lugs (belonging to bowls and basins) are of the common wavy type, whereas the fifth is an unusual combination of lug and ring-handle.

Parallels in localities 4—6, 8, 11—16, 18—24, 27—36, 43—47, 49.

Rough fine buff or red ware.

32 fragments. Pl. 47: 3—10. Profiles, Fig. 4: j, m, p.

The paste is just as fine as in the three previous groups, but the present one is characterized by the treatment of the vessels' surface so that it is roughened in various ways.

Paste: The lower parts of the vessels are probably hand-made; the mouth is certainly finished off with a turn-table. The hardness is that of the hardest buff and red ware of the painted material. The colour is generally buff but there are also shades of red (Pl. 47: 4), grey or brown.

Surface finish: All fragments except one (Pl. 47: 3) have cord-impressions on the major part of the body, but not on the rim, the handles or the under-side of the bottom. The cord-impressions are either fine or coarse, running either all in one direction or intersecting. A hollow leg of a Li tripod (Pl. 47: 10) differs from the other specimens in that it has a criss-cross pattern of fine lines made by a single-edged tool.

Decoration: None, except (on 3 side fragments) narrow bands where the cord-pattern has been intentionally smoothed out.

¹) Of the 7 restored vessels there is only one (Fig. 4:o) with a flaring base, a unique feature in the MKY pottery. The 3 miniature bowls (Pl. 46: 14—16), one complete and the other two restored have different profiles; the diameter of the mouth is 5—6 cm.

²) Five have nearly perpendicular sides, and (as reinforcement) a triangular-sectioned band round the mouth; one has a similar perpendicular side but a simple flat lip; three are flaring, with a thickened, fluted horizontal lip.

Shape: All the fragments seem to have belonged to large vessels such as narrow-necked vases, jars and Li tripods, as evidenced by 21 side fragments, 3 rim fragments, 1 flat bottom and 7 Li tripod legs (6 hollow, 1 solid, Pl. 47: 8–10). One of the rim fragments is from the neck of a narrow vase, the mouth of which was reinforced by a band (Pl. 47: 4). Another sherd is part of the mouth of a jar, or a wide-mouthed vase, with a somewhat flaring rim (Pl. 47: 5). A third rim fragment indicates the shape of a bulging jar with an inward-curving mouth (Pl. 47: 3).

Appendages: A horizontal wavy lug, 2 ring-handles, one of which has a raised wavy band; 3 flat, round knobs with cord-impressions; three small knobs placed triangularly at the mouth of the jar with a flaring rim mentioned above.

Parallels in localities 6, 8–10, 13, 14, 20–25, 30, 32–35, 37, 43–46.

Fine grey ware with cord-impressions.

7 fragments. Pl. 48: 1, 2, 7.

Paste: A striation and, in certain cases, sharply accentuated profiles of the margins, show clearly the use of the turn-table in forming the upper parts of the vessels. The paste contains no tempering material or only an insignificant amount. It has a fine texture and is of medium hardness. The colour of the core is grey except in one case, in which it is brown, whereas that of the surface varies between grey and brownish grey.

Surface finish: The mouths and the insides are smooth (the insides of two fragments being even glossy). Most of the outer surface is covered with medium-coarse cord-impressions running all in one direction or intersecting.

Decoration: There is only one instance of any decoration: a wavy band in relief around the base of the lip of a basin (Pl. 48: 2). This band undoubtedly serves as a kind of reinforcement.

Shape: Only one of the fragments can be wholly restored: a large basin with the rim extended to form a spout (Pl. 48: 1). Five other fragments likewise belong to large basins; 4 of these are rim fragments, and, like the restored vessel, have a profiled, inward-curving rim. A seventh item is the vase neck fragment Pl. 48: 7.

Appendages: Of the two above-mentioned spouts, one is a tube-shaped spout (Pl. 48: 2). There are two kinds of handles: one is a horizontal wavy lug, and the other is a big, flat, oblique knob with cord-impressions.

Parallels in localities 2, 8, 11, 13–16, 19, 21, 24–30, 32–36, 43–45.

Painted fine-and-coarse ware.

17 fragments. Pl. 48: 3–5.

This type of pottery is interesting in that it establishes the connection between the painted fine ware and a few groups of coarse ware.

Paste: The vessels are hand-made, and finished off with the turn-table as far as the region near the mouth is concerned (the lower parts as a rule not so elaborately worked). The upper parts of the vessels consist of fine, homogeneous paste; the

lower parts have likewise been made of fine clay, but are moderately tempered with coarse or fine grains of different materials, such as quartz, resulting in a coarse, porous texture. It is of medium hardness. The sherds may be divided into the following four colour groups: entirely buff (12 fragments); entirely red (3); entirely grey (1); the upper part buff, the lower part with grey core and buff surfaces (1).

Surface finish: The upper parts are polished and painted with black designs. The lower parts have cord-impressions or, in a few cases, fine criss-cross impressions made by a single-edged tool; the cord-impressions sometimes rather large, sometimes tiny lozenges.

Decoration: Very little can be gleaned of the décor: close to the transition zone between the two kinds of ware, there are one or several narrow annular bands, above which there are, in some cases, similar bands that are slightly curved.

Shape: There is no mouth preserved but 2 narrow neck fragments of vases (one shown in Pl. 48: 3), and 3 pieces from the bulging part between shoulder and body of vases, indicate the occurrence of vessels similar to those in the fine painted material. All the other fragments probably come from vases and jars.

Appendages: Wavy or cord-marked bands in relief are found on the five vase fragments just mentioned.

Parallels in Lo-han-t'ang West and Sin-tien B only.

Plain fine-and-coarse ware.

1 specimen (broken in 3 pieces). Pl. 48: 6 a, b.

This specimen is in every respect identical with the buff variety of the previous group except that it lacks painted decoration (partly fine, partly coarse ware). It should be observed that it derives from a basin, provided with a tube-shaped spout, whereas the fragments in that group come from jars and vases.

Close to the rim of our specimen there are three mending-holes.

Painted coarse ware with cord-impressions.

3 fragments (different vessels). Pl. 49: 1—3.

Paste: The vessels are hand-made with the help of the turn-table. The paste contains various kinds of large and small grains; contrary to most of the unpainted groups of coarse ware, the paste is here well levigated. It is of medium hardness and the colour is buff (except in the spout Pl. 49: 2, the core of which is dark grey).

Surface finish: Cord-impressions of two kinds cover the outside up to the lip: fine single impressions and coarse, intersecting impressions.

Decoration: Painted decoration in black in the shape of a hanging bow line occurs on all the three fragments applied to the impressed but slightly smoothed-off surface of the rim; the surface of the margin is also painted black. Wavy bands in

relief may be regarded as a decoration as well as a kind of reinforcement; such a band occurs around the base of two spouts.

Shape: The three fragments have belonged to large basins with slightly inward-curving rim, a spout, and, probably, with a couple of horizontal lugs. The outline seen from above is almost oval, the maximum diameter being about 40 cm.

Appendages: The spouts are shaped like tubes with a slightly oval section, and are turned upwards. The lug is of the common dentated type, placed horizontally about 5 cm below the lip.

Parallels in Lo-han-t'ang West only.

Plain fine grey ware.

1 complete bowl, 24 fragments. Pl. 49: 4—12. Profiles, Fig. 4: g, h, n.

This is a group with noticeable variations, though it is clearly distinguished from the other groups. Most of the sherds resemble more or less the grey variety of the »Black Pottery» so common in finds from central and northwest China (but not the dark grey Lung-shan type with thin walls). A small bottle (Pl. 49: 4) differs from the other specimens in being made of light blueish grey unpolished paste; its shape resembles that of certain pottery *ch'i* found at Siao-t'un.¹⁾

Paste: All the fragments are hand-made; except the complete bowl, and possibly also the said bottle, Pl. 49: 4, they have been finished off at the mouth with the aid of the turn-table. The paste is very fine and the thickness medium, whereas the degree of hardness varies from fairly soft to fairly hard. The surface is grey, whereas the core is grey, greyish brown or reddish brown.

Surface finish: All the fragments are smoothed, and (with the exception of 4 items) polished.

Decoration: Only three fragments are decorated. The small unpolished neck of a vase has a row of oblique dents around the base; the vase sides in Pl. 49: 5, 6 are adorned with an annular rib.

Shape: The following shapes of vessels occur: cup, one item (Pl. 49: 7); rim fragments of bowls, 6 items (two of which represent large bowls with profiled, inward-curving rim, Pl. 49: 8, and one of which is probably from the bowl of a stem cup); rim fragments of basins, 6 items (5 of which have a profiled rim, Pl. 49: 9); rim fragment of a plate with high rim, 1 item; fragments of vases, 7 items (4 from the side and 3 from the neck); bottle (see above); bottoms with steam-holes, 3 items (Pl. 49: 10, 11), the holes being large and irregularly rounded.

Appendages: The bottle has one small handle left; this is vertical and nearly ring-shaped.

Grey pottery with polished surface and ware of medium thickness also in localities 4, 8, 14—16, 19, 21, 32, 34, 42, 44, 46, 48, 49.

¹⁾ See Chung kuo k'ao ku h'ue pao, III, 1948, p. 58, fig. a 3.

Coarse greyish white ware.

1 rim fragment. Pl. 50: 1.

Paste: The vessel is hand-made in a fairly crude way. The paste has been tempered with a small amount of medium-sized grains. It is, however, rather well textured, and it is medium-hard. The colour of the surfaces is light buff, probably due to discoloration, but the core is greyish white. The wall is fairly thin (0.4—0.5 cm).

Surface finish: The outer surface is plain, though with some irregularities.

Decoration: The margin of the lip has oblique cord-impressions (found also in some of the following types); a dentated band in relief round the transition zone between shoulder and rim probably serves as a reinforcement.

Shape: Wide-mouthed jar with a strongly bulging body and a low rim curving outwards.

Parallels in localities 4, 10, 17, 20—22, 26, 27.

Medium-coarse grey ware with cord-impressions I.

4 fragments (one out of a rim). Pl. 50: 2,3.

Paste: The specimens are hand-made in a fairly crude way; there are, however, indications of the use of the turn-table at the top surface of the rim. The paste is moderately tempered with medium-sized grains, rather well textured, of medium hardness. Its colour is grey.

Surface finish: Nearly vertical, fairly coarse cord-impressions below the rim.

Decoration: One or several annular, somewhat wavy bands in relief, on which are cord-impressions.

Shape: The rim fragment belongs to a wide-mouthed jar; the remaining three fragments also belong to large vessels (either jars or vases). There is a flat, round knob between the rim and the wavy band on the rim fragment, Pl. 50: 2.

Medium-coarse grey ware with cord-impressions II.

1 complete jar.

Paste: This vessel is either hand-made or moulded. The paste has a small amount of tempering material, it is fairly soft and the surfaces are grey. The thickness of the wall is 0.5—0.7 cm.

Surface finish: From the margin of the lip down to the bottom the surface is covered with fine vertical cord-impressions.

Decoration: There are three bands in relief, in places somewhat wavy, with cord impressions, running annularly round the neck and the belly.

This small jar is moderately bulging, has a wide mouth with outward-curving rim and a slightly concave bottom. It is 15 cm high; the diameter of the mouth is about 13 cm.

Coarse ware with cord-impressions I.

32 fragments. Pl. 50: 4—7.

Paste: All specimens are hand-made. The paste contains a considerable amount of, mostly medium-sized, grains as tempering material, but it is fairly well levigated. 4 fragments (one shown in Pl. 50: 4) constitute a special group, which is characterized by its red colour and extreme hardness. The majority of the fragments have a grey core and grey (sometimes brownish) surfaces, their hardness varying from medium-hard to hard. The fragments deriving from necks are smooth, those from sides or bottoms have intersecting impressions made mostly by cords, though in several cases also by an edged tool. The criss-cross pattern of both techniques have lozenges of varying size.

Decoration: The margin of the (outward-curving) lip has a single cord-like impression (Pl. 50: 6); in one case (Pl. 50: 5) there is also a dentated band in relief.

Below the neck, the exterior of the body has annular bands in very flat relief, the interval between them being usually 1.5—2.0 cm; these superimposed bands have been applied in lumps, which have then been partly smoothed out in a careless way.

Shape: All sherds seem to represent one type of vessel only: a jar with fairly high rim, which curves strongly outwards; the shoulder is markedly bulgy; the side below is almost straight, nearly perpendicular, and narrows very slightly towards the flat bottom. The wall is about 0.7 cm thick.

3 fragments are from the rim, 7 from the bottom, and 22 from the side of the vessel. This type of vessel was apparently not provided with handles.

Coarse ware with cord-impressions II.

9 fragments. Pls. 50: 8—11, 51: 1, 2. Profiles, Fig. 4: d, 1.

The paste and certain particulars of the shape of the vessels have fairly close parallels in the group of painted coarse ware described above.

Paste: Except for the bowl in Pl. 50: 8 and the miniature vessel in Pl. 50: 9, the turn-table has been used at the mouths. The paste is tempered but well levigated. It is of medium hardness. The surfaces are reddish buff, the core a darker red.

Surface finish: Except on the smoothed rim, the exterior is covered with cord-impressions, either in an oblique or in a horizontal direction. The impressions are of varying size.

Decoration: Two fragments of jars have an annular row of oblique, oblong dents on the shoulder, just below the rim (Pl. 50: 10). One of these fragments from a shoulder (Pl. 51:1) has in addition short bands, in flat relief, just below the dents.

Shape: A sherd from a bowl with a horizontal lug at the lip (Pl. 50: 8) and another from a small, almost cylindrical jar (Pl. 50: 10) and the small vessel in Pl. 50: 9 are the only specimens that show the complete form of a vessel. 4 other fragments have belonged to wide-mouthed jars with thickened lip (3 of these also profiled); 1 frag-

ment is part of a rim of a basin having a tube-like spout turned upwards. Yet another fragment is unique in the pottery material from MKY: it is a hollow leg of a vessel with a flat bottom; it may have been a tripod (Pl. 50: 11).

Appendages: The largest fragment (Pl. 51: 2) has a round, flat knob with a dent in its centre.

Coarse ware with cord-impressions III.

19 fragments. Pl. 51: 3—8. Profiles, Fig. 4: f, k.

Paste: This ware has been hand-made, but in a few cases there are traces of the turn-table's having been used at the mouth. The paste in some cases contains a considerable amount of tempering material; in others its clay has been poorly levigated. All the fragments are medium-hard, except two, the one being harder and the other softer than the majority. The colour is generally grey; a few specimens are buff, others brownish.

Surface finish: The exterior is covered with coarse intersecting cord-impressions. This surface treatment is also seen on the under-side of 2 bottom fragments (Pl. 51: 8).

Decoration: 8 out of 11 rim fragments are provided with a row of oblique depressions just below the smooth rim: either oblong or round dents, or else scores. One of the remaining rim fragments (Pl. 51: 7) has an annular dentated, cord-marked band in relief. Judging from a few fragments, annular bands in relief sometimes occur on the lower parts of the vessels. All rim fragments except one (Pl. 51: 7, the only specimen which curves inwards) have oblique cord-impressions on the margin of the lip. Two of these fragments have, besides, dents on the outside of the lip (Pl. 51: 5).

Shape: All the fragments have belonged to wide-mouthed jars. The rims, revealed by 11 fragments, have been shaped as follows: 5 specimens curve strongly outwards, 5 are outward-curving with an angular, profiled lip, and 1 (Pl. 51: 7) curves inwards, with a thickened lip.

Appendages: Three fragments have a flat, circular knob below the rim.

Soft grey ware I.

8 fragments. Pl. 51: 9—12. Profile, Fig. 4: a.

Paste: All fragments are hand-made except, possibly, a jar with several features of its own (see below; Pl. 51: 9). This latter has a smoothed rim, probably made by means of the turn-table. The paste contains a moderate amount of tempering material. The texture is poor. The degree of hardness is medium. The surfaces are grey, the core grey or greyish brown.

Surface finish: As all these fragments, except one, are from the mouth of vessels, nothing definite can be said about the surface treatment. The exception is a sherd from the bottom of a vessel, and this is plain. Two fragments of the main group show some faint traces of cord-impressions.

Decoration: 6 out of the 7 rim fragments are cord-marked on the margin of the outward-curving lip. On one of these (Pl. 51: 10), as well as on the exceptional piece mentioned, Pl. 51: 9, there is an annular, dentated band in relief below the rim. A similar band has been placed vertically on the ring-handle of Pl. 51: 11. Near the rim of at least four vessels (with outward-curving lip) there are one or more annular rows of vertical oval dents.

Shape: The 7 rim fragments have belonged to small, wide-mouthed jars with moderately bulging belly, all being of rather inferior make. The 8th item (the bottom fragment mentioned above) probably comes from a miniature vessel, possibly a jar with a somewhat straighter side than that of the preceding ones.

Appendages: One of the rim fragments (Pl. 51: 11) is provided with a fairly large vertical ring-handle of semi-circular section.

Soft grey ware II.

2 rim fragments. Pl. 51: 13.

Paste: The sherds are from hand-made vessels shaped with the aid of the turntable. There is a considerable amount of tempering material, but the paste is fairly well levigated. The hardness is medium. The surfaces are grey and the core is greyish brown.

Surface finish: On the lower part of one rim fragment (Pl. 51: 13) there appear to be traces of cord-impressions.

Shape: Both fragments have belonged to unusually large jars with a 1.5 cm thick wall. The rims are profiled, with a flat top surface.

THE PAINTED DÉCOR

The materials consist almost entirely of fragments, and complete patterns are therefore few; in our description we shall concentrate on the constituent parts of the patterns, first the simple «elements» and then the «motifs».

The word «motif» here means a figure or a series of figures to be found on a given surface, and which has to be clearly distinguished from other figures or series of figures.

The «elements» are, so to speak, the simpler building stones which go to form, in combinations, the more elaborate «motifs». There is, of course, nothing to prevent a simple «element» from sometimes having the function of a «motif» in that it alone and independently constitutes the décor of a given surface.

LIST OF ELEMENTS.

Our numbering here of these elements corresponds to that in the tables (Figs. 5—8), a few simple ones not drawn.

1. Horizontal long line (or narrow band, this being included in the general term «line»).
Horizontal short line.
Horizontal parallel lines.
2. Radiating lines. Exceptional.
3. Band, broader than 2 cm. Uncommon.
4. Vertical long line. Uncommon.
Vertical short line.
Vertical parallel lines. Uncommon.
5. Oblique line. Uncommon.
Oblique parallel lines. Fairly common.
Oblique lines forming an angle. Uncommon.
6. Alternating short, horizontal and vertical lines. Uncommon.
7. Long lines crossed or connected by short ones. Uncommon.
8. Zigzag line. Exceptional as a black design, but occurring in a few cases as a negative pattern.
9. Intersecting zigzag line. Exceptional.
10. Short thick vertical line issuing upwards or downwards from a horizontal line.
11. Short thick vertical line protruding alternately from above and below, resulting in a negative pattern like a squared meander. An arrangement analogous to the preceding but with round projections.
12. Simple cross. Uncommon.
Cross with one or several dots in each corner. Uncommon.
13. Double cross. Uncommon.
14. Treble cross with dots. Exceptional.
Treble cross with dotted circle in the centre. Exceptional.
15. Cross with bars tapering outwards. Uncommon.
Same, double and with central dot.
16. Asterisk-like figure. Exceptional.
17. Trellis, mostly close-meshed, is fairly common as the filling of a border band and of figures shown elsewhere in this list.
18. Horizontal single wavy line. Common on the exterior of bowls and basins, and as central element in motifs.
Horizontal, parallel wavy lines. Uncommon.
19. Multiple horizontal wavy line. Common on the exterior of bowls and basins.
20. Fluttering lines, parallel and vertical. Exceptional.
21. «Barbed wire» lines. Common.
22. S-line. Very common.
23. Multiple S-line. Common.
24. Trellis-filled S-line. Fairly common.
25. S-line cleft at one end.
26. C-line cleft at one end.
27. C-spiral. Common.
28. Single bow; either a «convex» bow, or a «concave» bow, or placed as a «standing» bow.
29. Convex bow with concentric lines.
Convex bow, multiple.

30. b—d. Concentric or multiple concave bow; very common in forming a garland border. The base line and the outermost bow-line are sometimes accentuated.
31. The same having a few small lines, hooks or triangles protruding obliquely from the base line.
32. Dotted bow. Exceptional.
33. Trellised bow. Uncommon.
34. Filled bow.
Half a filled bow, »standing». Uncommon.
35. Parallel »standing» bows. Common.
36. Single short line, more or less hook-shaped, mostly issuing upwards or downwards from a horizontal line. Very common.
37. Double hooks. Uncommon.
38. »Plume». Double or multiple variants of the preceding.
39. Circles or ovals, filled. Very common as round dots.
Circles or ovals, open.
40. Circles or ovals, concentric. Common.
41. Circles or ovals, dotted.
42. Circles or ovals, with a single or double vertical line.
43. Circles or ovals, hook- or plume-filled.
44. Circles or ovals, trellised or with trellis-filled parts.
45. Pear-shapes, as a rule trellis-filled.
46. Pointed oval: open, with one line or filled. Uncommon.
47. The same, dotted. Uncommon.
48. Triangle, straight-sided, open or filled. Uncommon.
49. The same, two sides straight, filled. Uncommon.
50. The same, one side straight, filled.
The same ending in a dot.
51. The same, all sides concave or convex.
The same, but dotted.
52. The same, open, with a dotted circle surrounded by three small triangles of the same type. Exceptional.
53. Filled quadrangles. Common only on the lips of basins.
The same, dotted.
54. Filled quadrangles with two sides concave or convex. Uncommon.
The same, dotted. Exceptional.
The same, open. Frame for motif.
55. Trellised quadrangles. Common only on the lips of basins.
56. Whorl, a »plume» issuing anti-clockwise from each corner of a triangle.
57. Zoomorphic figure, possibly representing a tortoise. Unique in this collection, but is also found on a basin bought in Lanchou (Fig. 9, Pls. 54: 9, 60: 5).

MOTIFS.

We shall describe here a series of motifs which either exist complete on some specimens or can be reconstructed through a combination of parts to be found on various fragments.

The S-line occurs frequently and in many variants.

The S-line cleft at one end (el. 25) occurs single or antithetically placed as

central design on the bottom of plates, bowls and basins. Of the sherds adorned with this motif, however, we have only three complete examples:

Single: square bowl, Pl. 11: 1; Antithetical: bowl or basin, Pl. 11: 2. Specimen from another site, Pl. 55: 1.

Variants of the S-line (elements 22—24) have to a fairly large extent been used for the decoration of whole sections of the vessels, of border bands or still smaller sections, usually combined with other elements. Through such a combination (S-line and spiral) there emerges the S-spirals motif.

It appears exclusively in combinations with still further elements (e. g. Pl. 14: 1, 7) in the MKY material. So does a motif consisting of various kinds of circles or ovals or pear-shapes with an S as tangent, figures which superficially remind of a real S-spiral.

To the latter group we may refer, for instance, a motif consisting of interlocked multiple S-lines dividing the surface to be filled into three irregular triangles with the principal points marked by dotted circles (Pl. 11: 3—12; Fig. 10 A is based on the fragment 11: 4, with the reconstructed parts drawn complete). Various fragmentary pieces seem to be highly analogous to this in composition, but this variation of the motif is complete only on the interior of a scoop (Pl. 54: 3) from locality 40 (Shan-chuang). See also Pl. 55: 2.

On account of the shape of vases and jars this motif is there of a somewhat different composition. 1/6 of the painted sherds are apparently adorned with this variant, the salient points of which are usually marked by dotted circles (Pl. 12: 1, Fig. 10 C; Pl. 10: 10, Fig. 10 B; Pls. 12: 2—7, 13: 1—5). A specimen from another locality, Pl. 55: 3.

The same combination (circles with S-lines as tangents) recurs arranged in a row so as to recall the shape of a §. We have, however, only two clear cases which occur on two basins and cover the central section of the interior surface from border to border (Pls. 13: 6 and 10: 9). In both cases we can conclude that an oval has framed in the motif. In Fig. 10 D we have drawn this reconstructed oval complete so as to show the general decorative idea.

Interlocking trellised S-lines with various elements (such as 51 f) constitute a motif with an unadulterated spiral character of the principal element (Pl. 14: 1, Fig. 10 E; Pl. 14: 2—9; a possible example from another locality Pl. 56: 1). We have only one complete example of this motif covering the interior surface of an ordinary bowl (Pl. 14: 7).

Trellised S-line combined with various elements (e. g. 41) is a motif found on some ten sherds deriving from the outside of basins or the shoulder of vases (Pl. 14: 10, 11; specimen from another locality Pl. 55: 4).

A border band with single or multiple S-lines and other elements (e. g. 51 f) occurs on the shoulder of at least three vases (Pl. 15: 1, Fig. 10 F; Pl. 15: 2; Pl. 15: 3 (?), Fig. 10 G; a specimen from another locality Pl. 55: 6).

Single or, less frequently, multiple S-lines interlocking with C-spirals or con-

centric circles, the S being strongly subordinated in the composition, is a well represented motif. In about ten cases, and probably on some 60 other sherds, it is definitely identified. It occurs exclusively on the exterior of basins (Pl. 15: 4, Fig. 11 H; Pl. 15: 5; for specimens from other localities see Pls. 55: 7, 9, 56: 2).

Probably the following motif also should be placed in the present series:

Multiple S-lines interlocking with incomplete dotted circles, a motif found on the shoulder of a vase (Pl. 16: 1, Fig. 11 I). Probably the same motif in Pl. 16: 3, and kindred details in Pl. 16: 2.

In a group by itself we have brought together motifs having a very slightly bending S-line, which interlocks with elements other than the C-spirals or concentric circles: S-line and elements 51 b and a variety of 41 (Fig. 11 J), represented by a vase (side) and a few bowls (exterior) (Pl. 17: 13, 14); S-line and element 45, open, represented by a bowl (exterior) (Pl. 17: 8); S-line and elements 42, with one line, and 51 b, represented by a small jar (exterior) (Pl. 17: 7); S-line and element 42, with two lines, represented by two vases (shoulder) (Pls. 17: 6, 21: 9); S-line and elements 44 e, 51 b and a 38 b form, represented by a basin (exterior) (Pl. 16: 4); S-line and elements 44 c, 51 b (in this case the curvature is somewhat more evident on account of the barbs, and the S-division of the central oval), represented by a basin (exterior) (Pl. 16: 5); S-line and elements 44 a or b, 51 b, represented by a few basins (exterior) and a vase (shoulder bend) (Pl. 16: 6–8); S-line and elements 45, trellised, and 51, represented by a few basins (exterior) and the shoulder fragment of a small vase (in a few cases the S-line is «barbed»), Pl. 17: 1–3 (in Fig. 11 K the pattern, reconstructed from various sherds, is drawn complete); S-line and elements 45, trellised, 51, and a 38 a form (this variant shows an S-line changed in part into a leaf-like figure and occurs on the shoulder of a small vase of unusual shape and ware Pl. 17: 15. Cf. the basin bought in Lanchou, Pl. 54: 10).

Pl. 56: 6, 8 show a few analogous motifs, somewhat unclear, from other localities.

On the lips of basins there frequently occur motifs that may be said to represent the S-spiral in a disconnected form. The pattern is here formed by the spared-out lighter bottom. The curvature of the S-line is generally very feeble indeed. There are two main variations, namely:

S-line and C-spiral. About 30 lip fragments have this motif. A few of them are reproduced in Pl. 18: 1–4. For comparison see Pl. 56: 12.

S-line and dotted circle. The number of indubitable examples is somewhat less than in the preceding group (Pl. 18: 5, 6).

A peculiar and complicated figure (Pl. 18: 9; Fig. 11 L, cf. el. 54 c), only fragmentarily preserved, may have originated from a border band with an S-line: the detached section between two ovals or circles. It occurs singly, on the exterior of a few basins, Pl. 40: 5, and, doubled, on about 20 sherds from the zone between the handle and the base of the neck on certain vases (Pls. 10: 5, 18: 7–10; an ex. from another locality Pl. 56: 9).

Border of oblique S-lines is our last example of motifs that have the S-line for their principal element. This border with S-lines running clockwise or anti-clockwise is represented by only a few fragments of basins (exterior) (Pl. 19: 1, 2).

The horizontal wavy band is more or less discernible in the following motifs.

The simplest motif may be a wavy line with no other elements than a short transversal line or something similar at one point. The motif occurs on the exterior (close to the rim) of a few bowls, several basins and plates with high rim.

A few fragments of basins have the same wavy line together with various kinds of hooks (el. 36, 37) projecting upwards from the «concave» parts of the line.

Other sherds show that a horizontal band of several parallel wavy lines has been the sole decoration on the outside of a few basins (Pl. 19: 4).

Another common motif gives us the impression of being a row of multiple S-lines (with two, three or four lines); on almost all the fragments there are at the points of contact either hooks (el. 36, 37) or dots (el. 39). This motif occurs on the exterior of basins, and plates with high rim (Pls. 19: 3, 5—11, 20: 1, 2; specimens from other sites in Pls. 54: 2, 57: 2).

The preceding motifs have undoubtedly been the only decoration on the exterior of the said vessels. There is, however, one example of a similar multiple (treble) wavy line with transversal bows at the narrowest points; it serves as a central line in a horizontal border band. At the upper margin of the band there is a row of dots and hooks, and at the lower margin rows of dots (Fig. 11 M): interior of a basin rim (Pl. 20: 3).

Close to the bottom of two small vases, or rather bottles, there is a type of border band resembling a «compressed» wavy band of multiple S-lines. In the interspace there is the element 51 alternately pointing upwards and downwards (Pl. 20: 4, 5).

On the body of a vase there is a border band with a simple wavy line in the centre, and in the interspaces there are alternately convex and concave filled bows, the whole powerfully drawn (Pl. 20: 6).

The following varieties may be regarded as more complicated forms of the preceding, but at the same time they are of a similar composition, with the central wavy line and the filled bows: bowls (exterior, interior); basins (lip, interior) (Pl. 20: 7—9; a specimen from another locality Pl. 57: 3).

In the next group of variants with alternately multiple or concentric concave and convex bows we sometimes meet with the real central wavy line, whereas in other cases we may get the general impression only of a wavy line. The elements dots and triangles often occur in several combinations in the motif: bowl (exterior); plates with high rim (lip) (Pl. 21: 7); basins (lip, sometimes exterior but mostly interior) (Pls. 21: 1—5, 8, 10, 22: 1—5); vases (shoulder, bottom) (Pls. 21: 9, 22: 6); specimens from other localities (Pls. 54: 8, 57: 4—6).

A parallel to the motif S-line cleft at one end (discussed first among our various motifs) is the C-line cleft at one end (element 26). It seems to be more common

than the former. Like that, it appears sometimes singly, sometimes in antithetical pairs:

Single: bowls (centre of the inside) (Pl. 23: 1, 2); vases (side) (Pl. 23: 3).

Double: bowls (centre of the inside) (Pl. 23: 4, 5).

The C spiral, which we have already frequently found in connection with several S-line variants, is rare as a more independent motif. We can give only a few pertinent examples, all from border bands: basins (exterior) (Pl. 24: 4—6, cf. Pl. 24: 1 with Fig. 11 N; possibly also 24: 2).

A row of parallel standing bows is probably an independent motif in the border bands on the lip of basins and jars; this, however, is not very common (Pl. 24: 7), whereas it often occurs as part of other motifs, particularly on the lips or sides of basins or jars (Pl. 24: 2, 8, 9). A peculiar variety, filling a gradually broadening band, may be seen as part of the interior decoration of a few basins (Pl. 24: 10).

A motif in several variants has as its dominant feature a row of connected bows resulting from the application on the margins of concave-sided triangles pointing either upwards or downwards: vase necks (Pl. 25: 1, 2); bowl (interior) (Pl. 25: 3); a similar specimen from another site (Pl. 59: 1).

In other cases there is a dot inside or connected with the bow: bowls (interior) (Pl. 25: 4—7); basin (interior); a specimen from another locality (Pl. 57: 7).

The vase necks show the greatest variety in regard to fillings of the bows (Pls. 14: 1, 18: 7, 25: 8—13; from other localities 57: 8, 9).

Examples of more exactly rounded convex bows are to be found in a few cases on the upper part of the necks of vases.

On several basins and on a few vases there is a border band with a row of multiple or parallel convex bows, in the interspaces of which there are filling elements such as parallel concave bow lines (Pl. 26: 2, 3; from other localities Pls. 54: 6, 7; 57: 10).

A type of motifs corresponding to the previous one but with concave bows (multiple or parallel) as principal element is to be found on the inside of many basins (Pl. 26: 4—8). On the lips of a few basins we find the same composition (Pl. 57: 11).

The following group of motifs is the largest one, in regard both to the number of variants and to the number of sherds. The placing of the decoration is generally very strict: the border (exterior and interior) of bowls, and the lip of basins, vases and jars. The motif is a garland of connected concave bows of various kinds with or without filling elements at the connecting points. We adduce a few examples (Pl. 26: 9—11, Pls. 27—29; examples from other localities Pls. 54: 1, 58: 1—6).

Of the trellised concave bow there are three representatives, probably belonging to a garland (Pl. 30: 1—3).

Finally, we may mention an example of a garland consisting of filled bows, sometimes with fillings such as vertical lines or the triangle element 50 a in the interspaces: bowl (exterior) (Pl. 30: 4); basins (lip) (Pl. 30: 5—8).

Another large group of motifs gives the general impression of a row of fringes.

This kind of motif occurs particularly on the lips of vases and jars, on the inside of bowls, and very often in the lower part of a pattern. We illustrate (Pls. 30: 9, 11—15; 31: 1—6, 8, 9) some common varieties, in some of which the fringes turn parallel to the border; for the rest we refer to Pls. 10: 10, 14: 2, 23: 7—9, 29: 9, 43: 1, 45: 13, 14; from other localities Pl. 54: 5, 6.

A border band consisting of a row of dots or ovals is a common motif on bowls (exterior, Pl. 32: 2, 3) and basins (lip, Pl. 32: 4, 5), but it also occurs on the necks of a few vases and on the side of a vase (Pl. 32: 7; from another locality Pl. 58: 8).

The interior of a few bowls and the shoulder of a vase (Pl. 32: 9) have a decoration of several rows of dots.

Element 11 (a and b) occurs frequently as a motif, particularly on necks of vases (Pl. 32: 11—15; from another locality Pl. 58: 9, 10).

Another (not very common) type of border band with dots as its predominant feature has one filled and more or less rounded dot placed on two or more horizontal parallel lines, or, as in the second example below (Pl. 33: 5) placed between crosses: vases (shoulder, belly, bottom) (Pl. 33: 1—4); lips of basins (Pl. 33: 5); from another locality Pl. 58: 11.

Border bands, where the principal feature is the dotted circle, dotted or filled triangle or quadrangle, evidently occur only on the lips of basins. Unfortunately only a few types can be reproduced, since the lip sherds are mostly too fragmentary (Pl. 34: 5—13, 16, in part also 17, 18; cf. Pls. 58: 18—20, 59: 2—4).

There are, for instance: triangles or quadrangles, enclosing dotted circles, alternating with transverse or oblique lines (Pl. 33: 6—11); dotted circles, with trellis pattern in the interspaces (Pl. 34: 1, 3, 4); specimens from other localities Pls. 58: 12—17, 19, 59: 5.

The concentric circle is one of the most common elements, especially on the interior bottom of bowls and basins. As it is usually connected with the rest of the decoration, we shall simply refer to Pl. 35: 2—4, and Pl. 59: 6—7, and point out a more isolated figure on a bottom of basin or bowl (Pl. 35: 1).

As a motif we may also regard the horizontal straight line, mostly occurring as parallel lines, on all the common types of vessels. These lines are most frequently met with on vases. A number of examples will be found in Pls. 35: 5—9, 36: 37: 1—5; cf. Pls. 54: 4—6, 9, 59: 9—12.

On a few vases and on a large stem cup, which is probably unique in the collection, we have a border band motif, which is the same as our element 6. Sherds which undoubtedly carry the same motif are reproduced in Pl. 37: neck of vase (Pl. 37: 6); shoulder of small vases (Pl. 37: 7, 8); stem cup (exterior bottom) (Pl. 37: 9).

An unusual decoration filling the interior bottom of some basins or bowls consists of a circle framing a central part with several parallel straight lines, concave-sided triangles and other fillings (Pl. 37: 10, Fig. 11 O).

Bands consisting merely of transversal or oblique lines or triangular figures

are found chiefly on the lips of basins (Pls. 37: 11–15, 38: 1–5, 8; from other localities Pls. 59: 13–16, 60: 1). Some of these triangles are very close to the «fringes» studied early, but are more straight-sided and stiff.

Bands consisting of either single or intersecting zigzag lines (elements 8 and 9), either in positive pattern (Pl. 38: 9) or in negative pattern (Pl. 38: 10–15) are found exclusively on the lips of basins (examples from other localities 59: 17, 18).

The same kind of negative zigzag pattern on the lips of basins is formed by filled or dotted, only approximately triangular, figures placed alternately upwards and downwards in the band, but here with oblique lines filling the interspaces (Pl. 38: 17, 18).

The trellis pattern is common (Pls. 39, 40) as part of various motifs. As an independent motif, it generally appears in the form of rather narrow horizontal border bands on bowls and vases: plate with high rim (lip); bowls (exterior) (Pl. 39: 1); vases (neck, side); from other localities (Pls. 54: 4, 5, 60: 2, 3).

There are only a few examples of trellis pattern covering a larger zone of a vessel than a border band, e. g. the bowls Pl. 39: 3–5, the latter of which has the tortoise-like drawing shown in Fig. 8.

LIST OF PLATES.

(The scale is 1/2, if not otherwise indicated.)

PLATE 1.

1. K. 3232: 63. Thin axe of black crystalline rock. One of the narrow sides bevelled. The neck broken. Length 108 mm.
2. K. 3232: 61. Thin adze of hard greenish rock. Length 111 mm.
3. K. 3232: 60. Thin adze of hard, dark grey to brown rock. One side strongly incrustated. Length 109 mm.
4. K. 3232: 72. Thin adze of dark grey rock. Flattening from edge to broken neck. Length 99 mm. Breadth 37 mm. Thickness near edge 14 mm, at neck 8 mm.
5. K. 3232: 64. Small, flat adze of liver-brown hard dense rock. Well polished on all surfaces. Length 58 mm. Breadth 37 mm. Thickness 12 mm.
6. K. 11998: 951. Small adze of dark brownish stone. Incrustations. Length 51 mm. Breadth 35 mm. Thickness 9 mm.
7. K. 11998: 960. Small adze of brown and white rock. Rectangular cross-section. Length 45 mm. Thickness 9 mm.
8. K. 3232: 62. Axe- or hoe-blade of dark grey, not very hard rock. One side is part of the smooth surface from which this tool is a flake. The other side is coarsely chipped. Length 163 mm.
9. K. 11998: 971. Fragment of large, thick axe or adze. The edge is broken; the neck is oblique and smooth on the narrow side, probably from blows. Length 140 mm. Breadth 65 mm. Thickness 33 mm.
10. K. 11998: 975 a. Rear part of an axe or adze of white marble. Rectangular cross-section. Breadth 45–56 mm. Thickness: at rear end 26 mm, at fracture 37 mm.
11. K. 11998: 975. Rear part of a flat hoe-blade of white limestone. Part of a bi-conical hole. Length of uppermost side 50 mm. Thickness below the hole 16 mm.
12. K. 11998: 954. Small, thin adze of dark grey rock. Well polished. Neck broken. Length 74 mm. Breadth 29 mm. Thickness 8 mm.

PLATE 2.

1. K. 11998: 953. Small, fairly thin adze of dark stone. Length 75 mm. Breadth 26 mm. Thickness 10 mm.
2. K. 3232: 71. Chisel of silk-grey jade. Rear part broken and spoiled during the excavation. Fore part much attenuated towards the tiny edge, which is only slightly asymmetrical. Length 105 mm. Breadth 17 mm. Thickness 16 mm.
3. K. 11998: 978. Fore part of chisel of dark grey rock. Rectangular cross-section. Breadth 19 mm. Thickness 8 mm.
4. K. 3232: 49. Small chisel of black rock. Well polished. Nearly square cross-section. Length 58 mm. Breadth 8 mm. Thickness (= edge breadth) 6 mm.
5. K. 11998: 976. Thin object of dark grey rock, probably cut out of an adze as the narrow-sides are well smoothed. Used as a chisel? Length 130 mm. Breadth 17 mm. Thickness (irregular) about 7 mm.
6. K. 1475. Fore part of chisel of greyish brown rock. Well polished. D-shaped cross-section. Edge ground most strongly from the flat side. Breadth 22—17 mm. Thickness 14 mm.
7. K. 3232: 57. Thick chisel with adze-edge. Black rock. Length 115 mm. Breadth 15 mm. Thickness 18 mm.
8. K. 11998: 958. Chisel of dark stone with broken end. Well polished. Length 84 mm. Breadth 16 mm. Thickness 13 mm.
9. K. 11998: 977. Small chisel of dark grey rock. Nearly square cross-section. Length 62 mm. Breadth 11 mm. Thickness 8.5 mm (rear part) and 6 mm (edge).
10. K. 1511. Thin cutting implement of dark grey rock. Concavo-convex in its length-section. Broken at the rear part. Length 62 mm. Breadth 35 mm. Thickness about 6 mm.
11. K. 11998: 965. Rectangular knife of dark grey rock. A deep furrow crossing a bi-conical central hole. Length 73 mm. Breadth 45 mm. Thickness 8 mm.
12. K. 3232: 58. Rectangular knife of grey slate. Edge sharp and ground from both sides. Length 85 mm.
13. K. 11998: 962. Fragment of rectangular knife of grey slate. Edge slightly curved, sharp, ground from both sides. Length 63 mm.
14. K. 11998: 961. Fragment of rectangular knife of grey slate-like rock. Edge sharp and ground from both sides. Length 60 mm. Breadth 35 mm. Thickness 4.5 mm.
15. K. 1469. Small cutting implement, crudely chipped from grey, hard rock. One side is part of the smooth surface from which this tool is a flake. Lateral notches. Length 70 mm. Breadth 35 mm. Thickness (irregular) about 10 mm.
16. K. 3232: 54. Complete ring, broken into three sections. Black rock. Well polished. The outer side is concave, the inner convex. Outer diameter 83 mm. Breadth 33 mm. Thickness 4.5 mm.
17. K. 11998: 942. Ring of dark stone. Triangular cross-section. 1/1.
18. K. 11998: 941. Ring of greyish white stone. 1/1.
19. K. 3232: 38. Fragment of ring of porous white marble, the empty spaces from dissolved brucite. Standing wall of rounded rectangular cross-section. Breadth 18 mm. Thickness 8 mm.
20. K. 11998: 943. Ring of dark stone. Rounded square cross-section. 1/1.
21. K. 3232: 36. Fragment of ring of porous, very soft marble. Shape as in Pl. 2: 16, concave outside and convex inside. Breadth 18 mm. Thickness 6 mm.
22. K. 1482. Cutting implement, or fragment of such, of dark grey rock. Well polished on portions of the surfaces. Edge sharp and ground from both sides. Length 122 mm. Thickness at rear part 17 mm.
23. K. 3232: 74. Fragment of implement of sandstone. Fairly well smoothed on both sides. Wedge-shaped in cross-section. The edge is blunt. Length 105 mm. Thickness at rear part 17 mm.

PLATE 3.

1. K. 1510. Grindstone of grey hard rock. Smooth, naturally rounded pebble with oval cross-section. Transversal groove glossy. Length 75 mm. Breadth 60 mm. Thickness 35 mm.
2. K. 3232: 37. Fragment of ring of white marble. Triangular cross-section with blunt outer edge. Breadth 13 mm. Thickness 8 mm.
3. K. 3232: 45. Complete ring of black rock. Planed off at the inner margin on both sides, the outer margin forming an edge. Outer diameter 69 mm. Breadth 9.5 mm. Thickness 8 mm.
4. K. 3232: 75. Fragment of ring of black rock. On one side a shallow fluting; the other side has been planed off at the inner margin. Outer diameter 66 mm. Breadth 9 mm. Thickness 6.5 mm.
5. K. 1484. Disc chipped from a flat, thin pebble of grey quartzitic sandstone. The side shown in the plate is very smooth. Used for polishing purpose? Diameter about 70 mm. Thickness 10 mm.
6. K. 3232: 51. Small, thin implement of grey slaty rock. One short side ground from both sides into a sharp edge. Length 37 mm. Breadth 24 mm. Thickness 4 mm.
7. K. 3232: 33. Small, thin cutting implement of greenish grey slate. The ends ground from both sides, the broader end being fairly sharp. Length 65 mm. Breadth 11 mm. Thickness 3 mm.
8. K. 3232: 67. Pestle-shaped object of limestone. Circular cross-section. The narrowest end rounded, the other flat and very smooth under the lime incrustation. Length 103 mm.
9. K. 1496. An oblong object with rounded ends of grey sandstone. Circular cross-section. Length 150 mm. Diameter about 40 mm.
10. K. 1497. Pestle of grey calcareous sandstone. Length 90 mm. Breadth 37 mm. Thickness 15 mm.
11. K. 11230: 10. Spindle-whorl of greyish white stone. Diameter 60 mm. Thickness 11 mm.
12. K. 11230: 4. Disc of grey rock. At centre of both sides an unfinished hole has been bored by a tube-like drill; the holes not exactly opposite each other. Diameter 55 mm. Thickness 6 mm.
13. K. 3232: 52. Small, well polished stone of light grey spotted granitic rock. Oval cross-section. Length 27 mm. Cross-section 19—21 mm.
14. K. 1509. Nearly cylindrical stone of grey spotted granitic rock. Diameter 70 mm.
15. K. 1500. Spherical stone of spotted whitish marble. Diameter 23 mm.
16. K. 1506. Spherical stone of whitish marble. Diameter 45 mm.
17. K. 1508. Spherical stone of white marble. Diameter 66 mm.
18. K. 3232: 76. Small, thin disc of grey stone with a large, 11 mm wide hole, bored from both sides. Length 30 mm. Thickness 3 mm.
19. K. 1498. Flattened, oval stone object with a small (prob. natural) hole at one end. One side is part of the smooth, rounded surface from which this object is a flake. Length 46 mm. Thickness at end opposite the pierced end 11 mm.
20. K. 3232: 34. Flat, oblong pendant of grey stone, with a round hole at one end. One side smooth and slightly rounded, the other chipped. Length 55 mm. Thickness 3 mm.

PLATE 4.

1. K. 11210. Small round pointed object of black, unctuous stone, well polished. Drill or arrow-head? Probably complete. Length 47 mm. Diameter 5 mm.
2. K. 11998: 970. Round disc of white marble, well polished. Diameter 20 mm. Thickness 8 mm.
3. K. 3232: 77. Small, well smoothed object of white marble, one side slightly concave, the other a little rounded. Length 19 mm. Breadth at the ends 18 mm, at middle 14 mm. Thickness 9 mm.
4. K. 3232: 27. Complete finger-ring of bone, well polished. Inner diameter 16 mm. Thickness of wall 2.5 mm. Height 4.5 mm.

5. K. 3232: 25. Small, oval bone ring with thin wall, well polished. Inner diameter 12—14 mm. Thickness of wall 1—2 mm. Height 6 mm.
6. K. 11998: 986. Part of a small bone ring with D-shaped cross-section. 1/1.
7. K. 11998: 1033. A very small D-shaped disc of bone, pierced with a hole. Length 8 mm. Thickness about 1 mm.
8. K. 11998: 989. Small, flat piece of bone with a hole through the middle. Slanting edge. Length 18 mm. Thickness 3 mm.
9. K. 11998: 157. Fragment of round, thin bone disc with a central hole. One side slightly rounded. Inner diameter c. 15 mm, outer c. 75 mm. Thickness 2 mm.
10. K. 3232: 10. Thin bone object with three holes, shaped from the tusk of a boar. The holes are bi-conically bored. The innermost side is sharp. Pendant? Length 80 mm. Thickness at middle 3 mm.
11. K. 11998: 985. Thin bone plate. Size 40×33 mm.
12. K. 3232: 24. Small, thin bone object, complete. Tip of triangular main part is sharp. Length 45 mm. Thickness 2 mm.
13. K. 3232: 9. Shallow segment from a very thick, cylindrical bone. One side flat with two broad furrows, the other side rounded with a small furrow continued inwards as a hole near the edge. Unfinished object? Length 40 mm. Thickness at middle 9 mm.
14. K. 11998: 1161. Carved, well-polished bone pin. Length 94 mm.
15. K. 11998: 1038. Carved top of a well-polished bone peg. Length 38 mm.
16. K. 11998: 987. Small, well-polished bone slat with a pair of notches at one end. Pendant? Length 60 mm.
17. K. 6730: 3. Bone arrow-head with triangular cross-section. Length 90 mm.
18. K. 11199. Bone arrow-head with triangular cross-section. 1/1.
19. K. 3232: 28. Fish-hook of bone, tip broken off. Length 48 mm. Diameter at thickest end 5 mm.
20. K. 3232: 29. Sewing-needle of bone. Flattened top. Length 44 mm. Thickness of top 1.5—2 mm.
21. K. 3232: 31. Sewing-needle of bone. Flattened top. Length 60 mm. Thickness of top 1—2 mm.
22. K. 3232: 30. Sewing-needle of bone. Flattened top. Length 95 mm. Thickness of top 1—2 mm.
23. K. 11998: 1134. Sewing-needle of bone. Flattened top. Length 45 mm. Thickness of top 1—2 mm.
24. K. 3232: 19. Curved bone object, pierced at the ends which are rounded and worn. D-shaped cross-section. Pendant? Width between the ends 40 mm. Thickness 4—5 mm.
25. K. 3232: 20. Curved, thin bone object, broken off at both ends. Oval in cross-section with sharp edges. Perforated with two small holes close to an old fracture, and with a larger hole at one of the ends. Width between the ends 50 mm. Thickness 3 mm. Height 7 mm.
26. K. 11998: 1205. Part of a ring-shaped object. Well-polished and with oval cross-section. 1/1.

PLATE 5.

1. K. 3232: 65. Bone tool, probably used as a chisel, with sharp edge (asymmetrical). One side flat, the other rounded. Surfaces mainly untouched. Apparently complete, except fractures at the top. Length 105 mm. Breadth 31 mm. Thickness at middle 13 mm, at top 5 mm.
2. K. 11998: 1173. Bone implement, probably chisel, with sharp edge, ground from one flat side, the other side rounded. Surfaces partially untouched. Complete except small fractures. Length 111 mm. Breadth 33 mm. Thickness near edge 11 mm, at top 5 mm.
3. K. 11998: 1064. Bone chisel (?). Length 60 mm. Edge breadth 31 mm.
4. K. 3232: 6. Bone implement, probably used as a chisel. Narrowing and thinning towards one end (not very sharp). Rectangular cross-section. Deep natural furrows on both sides. Length 146 mm. Breadth at top 17 mm. Thickness at top 8 mm.

5. K. 11998: 1165. Bone chisel. On one side, a deep, longitudinal furrow. 1/1.
6. K. 3232: 78. Bone implement, or poss. part of a horn, the tip of which has been cut sharp. Oval cross-section. Probably used as a chisel. Length 130 mm. Cross-section at fractured end 26—20 mm.
7. K. 11998: 1172. Bone awl with trochlea. Length 96 mm.
8. K. 3232: 5. Bone awl with the trochlea not retouched. Length 180 mm. Thickness of trochlea 15—20 mm.
9. K. 3232: 14. Pointed bone implement, probably shaped from a bird's hollow bone. Well polished on the outside. Length 120 mm. Wall less than 1/2 mm thick.
10. K. 11998: 1064. Bone awl with flattened back. 1/1.
11. K. 3232: 17. Short awl with widened top. One side flat with a broad furrow, the other slightly rounded. Length 85 mm. Thickness at top 4 mm.
12. K. 11998: 1244. Short pointed bone implement with flat, widened top, and nearly oval cross-section. One of a pair. Length 44 mm. Thickness 3—4 mm.
13. K. 11998: 1097. Small bone implement, one end pointed, the other bevelled. Nearly square cross-section. Length 48 mm.
14. K. 3232: 11. Bone awl. Top part nearly oval in cross-section and with a shallow furrow on the flattened side. Main part down to the pointed end oval in cross-section. Length 120 mm. Thickness 7 mm.
15. K. 3232: 12. Bone awl. Flattened on one side which has a broad, shallow furrow at the top. The other side rounded. Length 110 mm. Thickness near the pointed end 6.5 mm.
16. K. 11998: 1009. Fragment of a well-polished bone slat, pointed at the preserved end. Length 92 mm, thickness 1.5 mm.
17. K. 11998: 1022. Fragment of a well-polished awl. Oval cross-section. 1/1.
18. K. 11998: 995. Long narrow bone awl with widened, flat top. Oval cross-section. Length 143 mm. Thickness at top 2.5—3 mm, at main part 5 mm.
19. K. 3232: 16. Slender bone awl. Rectangular cross-section with rounded corners. Length 136 mm. Thickness at top 3.5 mm, at main part 4.5 mm.

PLATE 6.

1. K. 11998: 1008. Bone awl pointed at both ends. 1/1.
2. K. 11998: 1065. Short bone implement with one end pointed, the other cut from both sides into a sharp, oblique edge. Rectangular cross-section with rounded corners. Length 88 mm. Thickness near the oblique edge 6 mm.
3. K. 11998: 1123. Short bone slat, moderately curved, with pointed ends. Roughly cut. Width between the ends 80 mm. Thickness 4 mm.
4. K. 11998: 1034. Flattened bone implement, flaker-blade. Length 63 mm.
5. K. 11998: 1082. Bone implement, flat, tapering towards one end which is ground from both narrow-sides into a sharp edge. Length 60 mm. Thickness 3 mm, cutting-edge 4 mm.
6. K. 6730: 4. Short bone implement, attenuating towards the pointed ends, one of which is broken off at the tip. The latter end is roughly carved and has probably served as a tang. Oval cross-section at middle, round near the ends. Drill or arrow-head? Length of fragment 58 mm. Cross-section 7 mm.
7. K. 6730: 5. Bone implement like Pl. 6: 6, complete. Length 65 mm. Cross-section 7 mm.
8. K. 11998: 1236. Bone implement consisting of a well polished, round main part narrowing towards a sharply pointed end, and a roughly carved, broken-off tang. Length 97 mm. Thickness 7—8 mm.
9. K. 3232: 22. Very small bone implement, flattened, with one end pointed and the other cut from both sides into a wedge. Drill? Length 38 mm. Thickness 3 mm.

10. K. 11196. Bone implement consisting of a main part with nearly triangular cross-section and pointed end, and a tang. Well polished. One side flat, the other slightly rounded. Length 79 mm. Width of sides 9 mm.
11. K. 11998: 991. Short bone implement consisting of a rectangular main part of rhombic cross-section, and a narrow, rounded part pointed at the end. Poor condition. Length 69 mm. Thickness about 10 mm.
12. K. 11998: 1073. Bone implement, flattened and with one end pointed and thinner than the other. Roughly carved. Length 68 mm. Thickness 5 mm.
13. K. 3232: 8. Long, narrow bone implement, probably used as a pick. Broken off at the top. Slightly bent at the narrow end which is ground to an edge. Length 183 mm. Thickness about 6 mm.
14. K. 3232: 7. Bone implement, wedge-shaped at both ends, probably a chisel. Rectangular cross-section. Length 145 mm. Thickness about 9 mm.
15. K. 3232: 13. Bone implement consisting of a thin, well polished slat, narrowing towards a pointed end. Length 118 mm. Thickness 2 mm.
16. K. 3232: 4. Fragment of a long, thin bone slat which is curved as well as bent. Length 230 mm. Thickness 2 mm.
17. K. 11998: 1210. Short bone slat. Implement? Length 67 mm. Thickness 2.5 mm.
18. K. 3232: 15. Bone implement of unknown use consisting of a cylindrical solid piece widened at one end, the other end bored longitudinally to a depth of 9 mm. Fine polish. Length (complete) 72 mm. Diameter 14—8 mm.

PLATE 7.

1. K. 3232: 42. Crescent-shaped, flat object of grey pottery. Broken off at the broadest end. On one side, the dorsal edge is dentated. 1/1. Thickness at inside 3.5 mm.
2. K. 3232: 41. Fragment of crescent-shaped, flat object of greyish brown pottery. Deep dorsal furrow. 1/1. Thickness at inside 8 mm.
3. K. 3232: 43. Fragment of crescent-shaped object of grey pottery. Deep dorsal furrow. 1/1. Thickness at inside 7 mm.
4. K. 11998: 934. Fragment of thin crescent-shaped object of dark grey pottery. One side decorated with oblique incised lines. 1/1. Thickness at inside 4 mm.
5. K. 11998: 932. Fragment of crescent-shaped object. One side flat, the other rounded and slanting towards the outer edge. Grey pottery. 1/1. Thickness at inside 8 mm.
6. K. 3232: 79. Hook-shaped object of grey pottery. Triangular cross-section. 1/1.
7. K. 3232: 80. Hook-shaped object of grey pottery with a deep, rounded dorsal furrow. Nearly square cross-section. 1/1.
8. K. 11998: 931. Fragment of a grey clay ring with dentated outside. Nearly triangular cross-section. Planed off on one side. 1/1.
9. K. 11998: 927. Fragment of a clay ring. Grey ware. 1/1.
10. K. 11998: 928. Fragment of a clay ring. Dark brownish ware. 1/1.
11. K. 11998: 929. Fragment of a clay ring. Dark brownish ware. 1/1.
12. K. 11998: 939. Fragment of a clay ring. Grey ware. 1/1.
13. K. 11998: 937. Fragment of a clay ring. Grey ware. 1/1.
14. K. 3232: 46, 47. Fragment of a thin ring of grey clay. D-shaped cross-section. 1/1.

PLATE 8.

1. K. 3232: 82. Fragment of a clay ring. Pale brown ware. Decorated with trellis pattern in dark brown, partly effaced by a facet on the upper part of the outside. One side flat, the other vaulted. Outer diameter 76 mm. Thickness 6.5—7.5 mm.

2. K. 3232: 39. Fragment of a clay ring with thin, upright wall. Pale reddish brown ware. Decorated in a dark brown colour on the outside and the flat rims. Outer diameter 58 mm. Thickness 4 mm. Height 18 mm.
3. K. 3232: 81. Fragment of a clay ring, coarsely made. Greyish brown ware. Nearly square cross-section, a little rounded on the inside. Outer diameter 50 mm. Thickness 9—10 mm.
4. K. 3232: 83. Fragment of a clay ring, coarsely made. Pale brown ware. Rectangular cross-section. Outer diameter 45 mm. Thickness 5—6 mm. Height 10 mm.
5. K. 3232: 44. Complete ring of grey pottery. A deep, rounded furrow along middle of outside. Outer diameter 55 mm. Thickness 6 mm. Height 18 mm.
6. K. 11230: 7. Spindle-whorl of greyish brown ware. One side slightly convex. Diameter 60 mm. Thickness at hole 20 mm.
7. K. 3232: 84. Spindle-whorl of pale brown ware, decorated with a few incised lines on one side. Almost flat. Diameter 55 mm. Thickness about 9 mm.
8. K. 11998: 156. Ring-shaped, perforated sherd. Ware fine and straw-coloured. 1/1.
9. K. 11998: 158. Ring-shaped, perforated sherd. Ware fine and pale brick-red. 1/1.
10. K. 11998: 155. Small, oval sherd. Ware painted, fine and straw-coloured. 1/1.
11. K. 11126. Rectangular knife or scraper, made of a sherd. Ware fine and straw-coloured, with decoration in dark brown on the rounded side. The edge ground from both sides. Length 77 mm. Thickness about 4 mm.
12. K. 11998: 964. Fragment of a rectangular knife or scraper of pale reddish brown pottery (sherd?). Edge ground from both sides. Thickness 5 mm. 1/2.
13. K. 11998: 968. Fragment of a rectangular knife or scraper of grey pottery. Back a little convex, edge worn concave. Thickness 5 mm. 1/2.
14. K. 12001: 1359. Rectangular knife or scraper consisting of a coarsely cut sherd, one longer edge ground from the rounded side. Ware fine and straw-coloured, with decoration on the outside in a dark brown colour. Thickness 5 mm. 1/2.
15. K. 3232: 85. Rectangular knife or scraper, coarsely chipped from a sherd. Lateral notches. Edge blunt, ground from the rounded side. Ware fine and straw-coloured. Thickness 5 mm. 1/2.
16. K. 3232: 86. Fragmentary object of grey pottery, made of several bars twisted into a flattened section of a ring. Thickness 15 mm. Breadth 32 mm. 1/2.
17. K. 11998: 945. Small, phallus-like clay object. Ware fine and pale straw-coloured. Height 37 mm. Breadth at the base 17 mm.
18. K. 3232: 87. Small, thin object of mother-of-pearl with a pair of notches at one end. The other end broken off. Thickness 2 mm. 1/1.

PLATE 9.

- 1 a—c. K. 3232: 70. Earthenware rattle, the shape possibly representing a tortoise. Ware fine and straw-coloured. Decorated on the vaulted side in a dark brown colour. Near the edge between the two sides there are four small oblique holes, forming a rectangle, possibly for suspension. Size about 1/1.
2. K. 11998: 154, outside. Bottom and portion of side of a pottery rattle of the same type as Pl. 9: 1. Ware fine and straw-coloured. Incrustations. Four holes obliquely through wall between side and bottom. Thickness of wall 5—6 mm. Size about 1/1.
3. K. 3232: 68. Earthenware rattle, the shape possibly representing a monkey. A small hole at middle of each side of the object may have been used for suspension. Size about 1/1.
- 4 a—b. K. 3232: 69. Fragmentary object of grey pottery, well polished on the vaulted side. The edge of the flat base is coarsely chipped. Size about 1/1.

PLATE 10.

1. K. 12001: 270, outside. Fragmentary bowl. Ware fine and straw-coloured. Incrustations. Height 77 mm. Mouth diameter 180 mm. Bottom diameter 88 mm.
2. K. 11999: 23. Fragment of the upper part of a fairly small vase. Short neck flaring towards flat rim. Ware fine and pale brown. Decorated on the shoulder in a dark brown colour. Mouth diameter 80 mm. Height of preserved fragment about 120 mm.
3. K. 12001: 1510. Fragmentary vase. Ware very fine. Outside pale straw-coloured. Inside partly pale straw-coloured, partly pale brick-red. Core brick-red. 1/3.
4. K. 12001: 1508. Large fragment of a vase, similar to Pl. 10: 5. Flat bottom. Ware fine, with pale brick-red surfaces and greyish core. Dark spots. Incrustations. 1/3.
5. K. 12001: 1507. Large fragment of a narrow-necked vase. Ware fine and straw-coloured. Red spots. Incrustations. Part of a vertical ring-handle. 1/3.
6. K. 12001: 1503. Upper part of a large vase. Ware fine, outside straw-coloured, inside and core brick-red. Incrustations. Height of neck 111 mm. Mouth diameter 173 mm.
7. K. 5921, outside. Reconstructed bowl. Ware fine and straw-coloured; a few reddish spots on the surfaces. Height 66 mm. Mouth diameter 119 mm. Belly diameter 133 mm. Bottom diameter 55 mm. Thickness 5 mm.
8. K. 11999: 129, outside. Fragmentary lid with a hook-shaped knob on the top. Ware fine and straw-coloured. Incrustations. Height 80 mm. Diameter 230 mm.
9. K. 12001: 1115, out- and inside. Large fragment of a basin. Ware fine and straw-coloured. Mouth diameter 325 mm. Lip breadth 20 mm.
10. K. 12001: 1509. Large fragment of a jar with two vertical ring-handles. Ware very fine and pale straw-coloured. Lip breadth 18 mm. Mouth diameter 207 mm.

PLATE 11.

1. K. 12001: 184, inside. Fragmentary square bowl with round, flat bottom. Ware fairly fine; surfaces pale straw-coloured, core greyish. Decorated on both sides in a dark brown colour. Height 57 mm. Bottom diameter about 55 mm. Length of each side at mouth about 120 mm.
2. K. 12001: 905, bottom, inside. Fragment of a bowl. Ware fine and straw-coloured. Decorated on inside in dark brown. Bottom diameter 110 mm.
3. K. 11241: 15, inside. Fragment of a bowl, reconstructable. Ware fine and straw-coloured. Decorated on both sides in black. Diameter of mouth 160 mm, of bottom 70 mm. Thickness of side 3—5.5 mm, of bottom 6—7 mm.
4. K. 12001: 584 H, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Incrustations. Decorated on both sides in a dark brown colour.
5. K. 12001: 869, inside. Rim fragment of a basin. Ware fine, with straw-coloured surfaces and greyish core. Decorated in a blackish brown colour.
6. K. 12001: 866, inside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour.
7. K. 12001: 40, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on both sides in a black colour.
8. K. 12001: 182, inside. Rim fragment of a large bowl. Ware fine and straw-coloured. Incrustations. Decorated on both sides (the outside showing only a band along the rim) in a dark brown colour. Mouth diameter about 220 mm. Thickness 4—7 mm.
9. K. 12001: 533, inside. Rim fragment of a large bowl. Ware fine and straw-coloured. Dark spots. Decorated on both sides in a dark brown colour.
10. K. 12001: 748, inside. Rim fragment of basin. Ware fine and straw-coloured. Core pale brick-red. Incrustations. Decorated on both sides and lip in a dark brown colour. 1/3.

11. K. 12001: 584 P, inside. Rim fragment of a large bowl. Ware fine and straw-coloured. Incrustations. Decorated on both sides in black.
12. K. 12001: 914, inside. Rim fragment of a basin. Ware fine and straw-coloured. Core greyish. Decorated on both sides and lip in a dark brown colour.

PLATE 12.

1. K. 12001: 1921. Large fragment of a vase. Ware fine and straw-coloured. Dark spots. Incrustations. Decorated in a blackish brown colour.
2. K. 11999: 169. Shoulder fragment of a vase. Ware fine and outside pale grey, inside straw-coloured with dark spots. Core straw-coloured. Incrustations. Decorated in a dark brown colour. 1/3.
3. K. 12001: 1922. Large fragment of a vase. Ware fine, outside straw-coloured, inside and core brick-red. Incrustations. Decorated in a dark brown colour.
4. K. 11999: 283. Belly-sherd of a small vase. Ware fine and pale straw-coloured. Dark spots. Incrustations. Part of a vertical ring-handle. Decorated in a dark brown colour.
5. K. 11999: 138. Belly fragment of a vase. Ware fine, outside straw-coloured, inside and core brick-red. Incrustations. Decorated in a dark brown colour. 1/3.
6. K. 11999: 135. Belly fragment of a vase. Ware fine, outside pale straw-coloured, inside and core brick-red. Dark spots. Incrustations.
7. K. 12001: 1784. Belly fragment of a vase. Ware fine, pale straw-coloured. Surfaces and core greyish. Brown spots. Incrustations. Part of a vertical ring-handle. Decorated in a brown colour.

PLATE 13.

1. K. 11999: 148. Belly fragment of a vase. Ware fine and brick-red. Dark spots. Core partly greyish, partly brick-red. Decorated in a black colour.
2. K. 11999: 170. Shoulder fragment of a vase. Ware fine and straw-coloured with brick-red core. Incrustations. Decorated in black.
3. K. 12001: 1324. Belly fragment of a vase. Ware fine and straw-coloured. Incrustations. Decorated in a blackish brown colour. 1/3.
4. K. 11999: 133. Belly fragment of a vase, with vertical ring-handle. Ware fine and straw-coloured. Dark spots. Decorated in a brown colour. 1/3.
5. K. 12001: 1789. Belly fragment of a vase. Ware fine and straw-coloured. Dark spots. Decorated in black.
6. K. 6593, lip and inside. Reconstructed basin. Horizontal lug-handle with dentations. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour. Height 160 mm. Mouth diameter 353 mm. Bottom diameter 128 mm. Lip breadth 18 mm. 1/5.

PLATE 14.

1. K. 12001: 1505. Fragment of a large vase. Ware fine and straw-coloured. Dark spots. Incrustations. Decorated in black.
2. K. 11999: 159. Fragment of upper part of a jar with low neck. Ware fine and straw-coloured with brick-red core. Dark spots. Incrustations. Decorated on lip and outside in a dark brown colour.
3. K. 11999: 622. Neck fragment of a vase; near shoulder. Ware fine and straw-coloured. Decorated in a dark brown colour.
4. K. 3232: 88, outside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on outside and lip in a dark brown colour.

5. K. 11998: 494, outside. Rim fragment of a fairly small basin. Ware fine and pale straw-coloured. Decorated on outside and lip in a black colour.
6. K. 11998: 509, outside. Rim fragment of a basin. Rounded angle between lip and outside. Ware fine and straw-coloured. Decorated on outside and lip in black.
7. K. 11241: 19, inside. Fragment of a bowl, reconstructable. Ware fine and straw-coloured. Decorated on both sides in a blackish brown colour. Diameter of mouth 140 mm, of bottom 47 mm. Thickness of side about 4 mm, of bottom 8 mm.
8. K. 11999: 758. Fragment of a vase, probably from shoulder. Ware fine and greyish brown. Decorated in a blackish brown colour. Wall relatively thin: 3—4.5 mm.
9. K. 11999: 22, outside. Body fragment of a vessel, probably vase. Ware fine; outside pale straw-coloured, inside pale brick-red, core greyish. Dark spots. Incrustations. Decorated in a dark brown colour.
10. K. 11999: 742, outside. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Horizontal ring-handle. Decorated on outside and lip in a dark brown colour. 1/3.
11. K. 11999: 619, outside. Fragment from side of a basin or a vase. Ware fine and pale brown. Decorated in black.

PLATE 15.

1. K. 11999: 19. Shoulder fragment of a vase. Ware fine and straw-coloured. Incrustations. Decorated in black. 1/3.
2. K. 12001: 1788. Shoulder fragment of a vase. Ware fine and straw-coloured. Brown spots. Incrustations. Decorated in a dark brown colour. 1/3.
3. K. 12001: 1787. Belly fragment of a vase. Ware fine and brownish straw-coloured. Dark spots. Incrustations. Decorated in a brown colour.
4. = Part of Pl. 10: 9.
5. K. 11999: 658, outside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on outside and lip in a blackish brown colour.
6. = Outside of Pl. 11: 11.
7. K. 11999: 225, outside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on outside and lip in black.
8. K. 11999: 131, outside. Rim fragment of a basin. Ware fine and pale brown. Decorated on outside and lip in a brown colour.

PLATE 16.

1. K. 12001: 1326. Shoulder fragment of a vase. Ware fine; outside straw-coloured, inside and core brick-red. Dark spots. Incrustations. Decorated in a dark brown colour.
2. K. 12001: 1192. Fragment of a vase, from neck and shoulder. Ware fine and straw-coloured. Incrustations. Decorated in a dark brown colour.
3. K. 12001: 1325. Shoulder fragment of a vase. Ware fine and pale brick-red. Dark spots. Incrustations. Decorated in a dark brown colour.
4. K. 12001: 1124, outside. Fragmentary basin. Ware fine and straw-coloured. Incrustations. Decorated on outside and lip in a dark brown colour. Height 137 mm. Bottom diameter 120 mm. 1/3.
5. K. 11999: 161, outside. Rim fragment of a basin. Ware fine and reddish straw-coloured. Incrustations. Decorated on outside and lip in a dark brown colour. 1/3.
6. K. 12001: 1125, outside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on outside and lip in black.

7. K. 11999: 188, outside. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on outside and lip in a brown colour.
8. K. 11999: 176, outside. Belly fragment of a basin. Ware fine; outside straw-coloured, inside pale brick-red, core brick-red. Incrustations. Decorated in a dark brown colour.

PLATE 17.

1. K. 11241: 5, outside. Rim fragment of a basin. Ware fine and pale reddish brown. Decorated on outside and lip in a blackish brown colour. Mouth diameter about 185 mm.
2. K. 11999: 130, outside. Rim fragment of a basin. Ware fine and pale straw-coloured. Below the margin a bi-conical hole. Decorated on outside and lip in black.
3. K. 11999: 279, outside. Rim fragment of a small basin. Ware fine and brownish straw-coloured. Green spots. Decorated on outside and lip in a dark brown colour.
4. K. 3232: 89, outside. Belly fragment of a vessel, probably a basin or a bowl. Ware fine and pale brown. Decorated on outside in a dark brown colour.
5. K. 12001: 584 A, outside. Rim fragment of a bowl, the rim of which is oblique at the inside. Ware fine and straw-coloured. Decorated on both sides in a black colour. Incrustations.
6. K. 11999: 139. Shoulder fragment of a vase. Ware fine and greyish brown. Dark spots. Decorated in a dark brown colour.
7. K. 11241: 13, outside. Rim fragment of a small jar of uncommon type, with lip. Belly moderately bulging; broken off near the base. Ware fine and pale brick-red. Surfaces fairly unevenly smoothed. Decorated on outside and lip in black. Mouth diameter 90 mm. Thickness 4—7 mm (thickest at base of rim).
8. K. 11241: 8, outside. Rim fragment of a bowl. Ware fine and pale brick-red. Decorated on outside in (discoloured?) light grey.
9. K. 11999: 86, outside. Small fragment of a basin, with base of rim. Ware fine, a little flawy, with a small amount of grains as tempering material; pale brown in colour. Traces of décor in a dark brown colour on the outside.
10. K. 12001: 247, outside. Small rim fragment of a bowl with edge of rim thickened on inside. Ware fine and pale brick-red. Decorated on outside in black.
11. K. 11998: 323, outside. Fragment of side of a basin. Ware fine and pale reddish brown. Surface of inside fairly uneven. Decorated in black on the outside.
12. K. 3232: 90, outside. Rim fragment of a bowl with rim strongly curved inwards. The edge of the rim is flat and oblique. Ware fine and greyish brown. Decorated in a black colour on the outside and the margin.
13. K. 12001: 358, outside. Rim fragment of a bowl. Ware fine; surfaces straw-coloured and core greyish. Decorated on outside in a dark brown colour.
14. K. 11999: 556, outside. Rim fragment of a bowl. Ware fine; outside straw-coloured, inside greyish brown. Incrustations. Decorated on the outside in a dark brown colour.
15. = Pl. 10: 2.

PLATE 18.

1. K. 12001: 970, lip. Rim fragment of a basin with small portion of wall. Ware fine and straw-coloured. Decorated on both sides and the lip in a black colour.
2. K. 11999: 309, lip. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on outside and the lip in a dark brown colour.
3. K. 11999: 153, lip. Rim fragment of a basin. Ware fine and straw-coloured. Decorated in a black colour on both sides and the lip.
4. K. 12001: 870, lip. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and the lip in a black colour.

5. K. 12001: 1026, lip. Rim fragment of a basin, the lip only slightly rounded and of even thickness. Ware fine and pale straw-coloured. Decorated on both sides and lip in a black, now partially faded colour.
6. K. 12001: 1119, lip. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and the lip in a dark brown, at places faded colour. Mouth diameter about 160 mm.
7. K. 12001: 1512. Upper part of a vase. Ware fine; outside straw-coloured, inside and core brick-red. Incrustations. Decorated in a dark brown colour. 1/3.
8. K. 12001: 1841. Belly fragment of a vase with a vertical ring-handle. Ware fine and straw-coloured. Dark spots. Incrustations. Decorated in a dark brown colour. 1/3.
9. K. 11998: 436. Fragment of a vase, from shoulder and belly. Ware fine; outside straw-coloured, inside pale grey, core greyish. Decorated in a dark brown colour.
10. K. 12001: 1883. Belly fragment of a vase with a vertical ring-handle. Ware fine; outside straw-coloured, inside brick-red. Red spots. Incrustations. Decorated in black. 1/3.

PLATE 19.

1. K. 12001: 1117, outside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour. 1/3.
2. K. 12001: 1137, outside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on outside and lip in black.
3. K. 12001: 658, outside. Rim fragment of a basin. Ware fine; surfaces reddish straw-coloured. Main core greyish. Incrustations. Decorated on both sides and lip in a blackish brown colour.
4. K. 11999: 275, outside. Rim fragment of a basin. Ware fine and brick-red. Decorated on both sides and lip in a dark brown colour.
5. K. 12001: 721, outside. Rim fragment of a basin. Ware fine; surfaces pale straw-coloured with dark spots, core greyish. Incrustations. Decorated on both sides and lip in a brown colour. Mouth diameter 260 mm. 1/3.
6. K. 11241: 17, outside. Large rim fragment of a basin. Ware fine and pale straw-coloured. Incrustations. Decorated on both sides and lip in a dark brown colour. Mouth diameter 380 mm. Thickness 4—5 mm.
7. K. 11999: 182. Rim fragment of a jar with lip. Ware fine, surfaces pale brown, core greyish. Dark spots. Decorated on lip and outside in a brown colour (now much faded).
8. K. 12001: 725, outside. Rim fragment of a basin. Ware fine and straw-coloured. Dark spots. Decorated on both sides and lip in a dark brown colour. Mouth diameter 500 mm. 1/3.
9. K. 12001: 950, outside. Rim fragment of a large basin. Ware fine, surfaces straw-coloured, core pale brick-red. Incrustations. Decorated on both sides and lip in a dark brown colour.
10. K. 12001: 602, outside. Fragment of a basin from side near rim, with a horizontal, dentated lug-handle. Ware fine, surfaces straw-coloured, core brick-red. Decorated on both sides in black.
11. K. 11241: 21, outside. Rim fragment of a plate with high rim. Ware fine and pale straw-coloured. Decorated on both sides and lip in black.

PLATE 20.

1. K. 12001: 706, outside. Large portion of a basin, consisting of several fragments; about 1/3 of the rim is preserved. The side broken off just above the base, which may have been repaired in olden times as there are two 3 mm. wide, round holes pierced through the wall near the break. Ware fine and straw-coloured. Incrustations. Decorated on both sides and lip in a blackish brown colour. Mouth diameter 350 mm. Breadth of lip 19 mm. 1/3.
2. K. 12001: 1039, outside. Rim fragment of a small basin with the lip strongly rounded at the top. Ware fine and straw-coloured. Incrustations. Decorated on both sides and the lip in a black colour.

3. K. 12001: 1121 C, inside. Fragment of a basin, from side near rim, with portion of lip. Ware fine and straw-coloured. Decorated on both sides in a dark brown colour.
4. K. 11999: 678. Base fragment of a small vase. Ware fine, outside straw-coloured, inside and core greyish. Decorated in a dark brown colour. Bottom diameter 65 mm.
5. K. 11999: 764, under-side. Base fragment of a fairly small vessel of uncertain shape, probably a vase. From the flat bottom, the side is slanting outwards at an angle of approx. 30° to a point about 40 mm above, at the break, where it is still more everted and a little curved. Ware is fine, a little flawed, and pale brown. Surfaces poorly smoothed and polished: on outside, especially around the break, several irregular incised lines, made after the manufacture of the vessel. Decorated on outside in a blackish brown colour. Bottom diameter 58 mm. Approx. diameter of belly at the break 120 mm. Thickness 4 mm.
6. K. 11999: 41. Belly fragment of a vase. Ware fine and with straw-coloured surfaces, grey core. Incrustations. Decorated in a dark brown, now much faded colour. Diameter approx. 160 mm. Thickness 4—5 mm.
7. K. 12001: 1012, lip. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and lip in a blackish brown colour.
8. K. 12001: 928, inside. Rim fragment of a basin. Ware fine, outside pale brick-red, inside straw-coloured, core brick-red. Decorated on both sides and lip in a blackish brown colour.
9. K. 12001: 1121, inside. Large rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on both sides and lip in a dark brown, now partially faded colour.

PLATE 21.

1. K. 12001: 650, inside. Rim fragment of a basin. Ware fine, surfaces pale straw-coloured, core greyish. Incrustations. Decorated on both sides and lip in black.
2. K. 12001: 991, lip. Fragment of lip of a basin with very small portion of the inside. Ware fine and straw-coloured, the surfaces of lip and interior covered with an extremely thin greyish white film, probably a slip. Incrustations. Decorated on inside and lip in a blackish brown colour.
3. K. 12001: 742, lip. Rim fragment of a fairly small basin, the lip bent obliquely downwards and of nearly even thickness. Ware fine and straw-coloured. Decorated on both sides and lip in black. Mouth diameter 175 mm.
4. K. 12001: 946, inside. Rim fragment of a basin. Ware fine, surfaces straw-coloured, core pale brick-red. Decorated on both sides and lip in a brown colour.
5. K. 12001: 740, lip. Rim fragment of a basin. Ware fine and brick-red. Decorated on both sides and lip in a brown colour.
6. K. 11999: 300, lip and inside. Rim fragment of a plate with high rim. Ware fine and straw-coloured. Decorated on outside and lip in a dark brown colour. Lip breadth 36 mm.
7. K. 11999: 31, lip and inside. Rim fragment of a plate with high rim. Ware fine and pale brick-red. Incrustations. Decorated on both sides and lip in black. Lip breadth 40 mm.
8. K. 12001: 1057, outside. Rim fragment of a small basin. Decorated on both sides and lip in a blackish brown colour.
9. K. 11999: 140. Belly fragment of a vase. Ware fine, surfaces greyish brown, core grey. Dark spots. Incrustations. Decorated in a brown colour. 1/3.
10. K. 12001: 583, inside. Rim fragment of a basin. Ware fine, surfaces pale brown, core grey. Brown spots. Decorated on both sides and lip in black.

PLATE 22.

1. K. 12001: 707, inside. Large rim fragment of a basin. Ware fine, surfaces pale straw-coloured with dark spots, core pale brick red. Incrustations. Decorated on both sides and lip in a dark brown colour. Mouth diameter 300 mm. 1/3.

2. K. 12001: 713, inside. Fragmentary basin with bottom. Ware fine and straw-coloured. Dark spots. Incrustations. Decorated on both sides and lip in a brown colour. Height 90 mm. Mouth diameter 300 mm. Bottom diameter 134 mm. Lip breadth 22 mm. Thickness: lip 7 mm; belly 6 mm; bottom 6 mm. 1/3.
3. = Inside of a fragment of the same basin as in Pl. 19: 5.
4. = Inside of Pl. 19: 5.
5. K. 12001: 722, inside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour.
6. K. 11999: 183. Belly fragment of a vase. Ware fine, surfaces straw-coloured, core brick-red. Decorated in a dark brown colour.

PLATE 23.

1. K. 5904, inside. Bowl restored from three fragments, about 2/3 of the original vessel. Ware fine and straw-coloured. Decorated on upper part of outside and bottom of inside in black, now partially faded colour. Height 68 mm. Diameter of mouth 155 mm, of bottom 70 mm.
2. K. 12001: 188, inside. Fragmentary bowl with bottom. Ware fine and pale straw-coloured. Dark spots. Incrustations. Decorated on both sides in black. Height 57 mm. Mouth diameter 154 mm. Bottom diameter 64 mm. Thickness: mouth 5 mm; belly 8 mm; bottom 5 mm.
3. K. 11999: 141. Fragment of a vase, from bend between shoulder and belly. Ware fine, outside straw-coloured, inside pale straw-coloured, core pale brick-red. Incrustations. Decorated in a dark brown colour.
4. K. 12001: 906, inside. Bottom fragment of a bowl or a basin. Ware fine and straw-coloured. Incrustations. Decorated in a dark brown colour. Bottom diameter 78 mm.
5. K. 12001: 592, inside. Bottom fragment of a bowl or a basin. Ware fine and pale straw-coloured. Dark spots. Decorated in a dark brown colour. Bottom diameter 74 mm.
6. K. 12001: 584 F, inside. Fragmentary bowl with bottom. Ware fine and straw-coloured. Decorated on both sides in black. Height 60 mm. Mouth diameter 184 mm. Bottom diameter 80 mm. Thickness: mouth 5 mm; belly 7 mm; bottom 5 mm.
7. K. 12001: 159, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on both sides in black.
8. K. 12001: 584 D, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on both sides in black.
9. K. 12001: 584 C, inside. Rim fragment of a bowl with bottom. Ware fine and straw-coloured. Decorated on both sides in a dark brown colour.

PLATE 24.

1. K. 11999: 131, outside. Rim fragment of a basin with a dentated, horizontal lug-handle. Ware fine and straw-coloured. Decorated on outside and lip in a dark brown colour.
2. = Outside of Pl. 13: 6.
3. K. 11999: 310, outside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on outside and the lip in a black colour.
4. K. 11999: 132, outside. Rim fragment of a basin. Ware fine and greyish brown. Incrustations. Decorated on outside and lip in a dark brown colour.
5. K. 11999: 20, outside. Large rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on outside and lip in a dark brown colour. 1/3.
6. K. 11999: 160, outside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on outside and lip in a blackish brown colour.

7. K. 12001: 876, lip. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides in a blackish brown colour. Mouth diameter about 370 mm.
8. = Outside of Pl. 11: 12. 1/3.
9. K. 12001: 958, outside. Rim fragment of a basin. Ware fine and brick-red. Decorated on both sides and lip in a dark brown, much faded colour. 1/3.
10. = Inside of Pl. 19: 1.

PLATE 25.

1. K. 12001: 1266, outside. Neck fragment of a vase. Ware fine and straw-coloured. Incrustations. Decorated in a dark brown colour.
2. K. 12001: 1204, outside. Neck fragment of a vase. Ware fine, surfaces straw-coloured, core greyish. Incrustations. Decorated in a dark brown colour.
3. K. 12001: 463, inside. Small rim fragment of a fairly large bowl with nearly vertical side. Ware fine and straw-coloured. Decorated in blackish brown on both sides. Thickness 6 mm.
4. K. 12001: 123, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on both sides in a dark brown colour.
5. K. 12001: 584 L, inside. Rim fragment of a bowl. Ware fine and pale straw-coloured. Decorated on both sides in a dark brown colour.
6. K. 12001: 72, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on both sides in a blackish brown colour.
7. K. 12001: 550, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Outside fairly carelessly smoothed, inside well polished and decorated in a brown colour.
8. K. 12001: 1559, outside. Shoulder fragment of a vase with base of neck. Ware fine and greyish brown. Incrustations. Decorated in a dark brown colour.
9. = Neck of Pl. 18: 7.
10. K. 11241: 9. Fragment of a small vase (bottle) of exceptional shape, from slightly concave bend between base of neck and shoulder. Ware fine and straw-coloured. Decorated in a blackish brown colour. Thickness 4—4.5 mm. Approx. diameter of neck at its base 80—90 mm.
11. K. 12001: 1561. Fragment from neck of a large vase. Ware fine and pale reddish brown. Decorated in a black colour. Thickness 4—6.5 mm.
12. K. 11241: 2. Fragment of neck of a large vase. Ware fine and greyish brown. Decorated in a black colour.
13. K. 12001: 1513. Neck fragment of a vase with high neck. Ware fine and straw-coloured. Decorated in a black colour. Outer diameter of neck at the base about 110 mm. Thickness 5—7 mm.

PLATE 26.

1. K. 12001: 1195. Neck fragment of a vase (reversed). Ware fine, surfaces pale straw-coloured, core brick-red. Incrustations. Decorated in black.
2. K. 11999: 260, outside. Rim fragment of a basin. Ware fine, surfaces straw-coloured, core greyish. Incrustations. Decorated on outside and lip in a blackish brown colour.
3. K. 12001: 648, outside. Rim fragment of a basin. Ware fine and straw-coloured with dark spots. Incrustations. Decorated on both sides and the lip in a dark brown colour (now faded).
4. K. 12001: 645, inside. Rim fragment of a basin. Ware fine, surfaces straw-coloured, core brick-red, but greyish in the middle. Decorated on both sides and lip in a brown, now faded, colour.
5. K. 12001: 679, inside. Rim fragment of a basin with a dentated, horizontal lug-handle. Ware fine and pale grey. Decorated on both sides and lip in a blackish brown colour.
6. K. 12001: 1119, inside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour. 1/3.

7. K. 12001: 736, inside. Rim fragment of a basin with a dentated, horizontal lug-handle. Ware fine, surfaces straw-coloured, core brick-red but greyish in the middle. Incrustations. Decorated on both sides and lip in a dark brown colour.
8. K. 12001: 684, lip. Rim fragment of a basin, the lip slanting downwards. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour.
9. K. 3232: 91, lip. Rim fragment of a jar with lip. Ware fine and pale brown. Decorated on lip and outside in a dark brown colour.
10. K. 11999: 158, lip. Rim fragment of a jar with lip. Ware fine, surfaces straw-coloured, core brickred, but greyish in the middle. Decorated on outside and lip in a dark brown, much faded, colour. 1/3.
11. K. 12001: 70, outside. Rim fragment of a bowl. Ware fine and pale brown. Decorated on both sides in a dark brown colour. 1/3.

PLATE 27.

1. K. 12001: 39, outside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on both sides in a dark brown colour.
2. K. 12001: 75, outside. Fragmentary bowl with bottom. Ware fine and straw-coloured. Incrustations. Decorated on both sides in black. Height 72 mm. Mouth diameter 190 mm. Bottom diameter 108 mm. Thickness: mouth 6 mm; belly 8 mm; bottom 7 mm.
3. K. 12001: 156, outside. Rim fragment of a bowl. Ware fine, surfaces straw-coloured, core brick-red. Decorated on both sides in a dark brown colour.
4. K. 12001: 155, outside. Rim fragment of a bowl with a dentated, horizontal lug-handle. Ware fine and straw-coloured. Decorated on both sides in a dark brown colour.
5. K. 12001: 584 K, outside. Rim fragment of a bowl. Ware fine, surfaces straw-coloured, core pale brick-red. Incrustations. Decorated on both sides in a blackish brown colour.
6. K. 12001: 154, outside. Fragmentary bowl with bottom. Ware fine, surfaces straw-coloured, core pale brick-red. Dark spots. Incrustations. Decorated on both sides in a brown, much faded, colour. Height 47 mm. Mouth diameter 164 mm. Bottom diameter 58 mm. Thickness: mouth 6 mm; belly 7 mm; bottom 7 mm.
7. K. 12001: 396, outside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on outside in black.
8. = Inside of Pl. 21: 5.
9. K. 11999: 28, lip and inside. Rim fragment of a plate with high rim. Ware fine and straw-coloured. Incrustations. Decorated on outside and lip in black. Rim breadth 45 mm. 1/3.
10. K. 12001: 973, inside. Rim fragment of a basin. Ware fine and pale grey. Decorated on both sides and lip in a brown colour.
11. = Inside of Pl. 27: 4.
12. K. 12001: 900, inside. Rim fragment of a basin with thick lip. Ware fine and straw-coloured. Incrustations. Decorated on both sides and lip in a blackish brown, now partially faded, colour.
13. K. 12001: 257, outside. Large rim fragment of a bowl. Ware fine and straw-coloured. Dark spots. Incrustations. Decorated on outside in a dark brown colour.

PLATE 28.

1. K. 12001: 584 J, inside. Rim fragment of a bowl. Ware fine and pale straw-coloured. Decorated on both sides in a dark brown colour.
2. K. 12001: 36, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated in a brown colour on both sides.
3. K. 11998: 223, lip. Rim fragment of a jar with lip. Ware fine and pale straw-coloured. Brown spots. Incrustations. Decorated on lip and outside in a blackish brown colour.

4. K. 12001: 679, lip. Rim fragment of a basin. 35 mm below the lip, a horizontal relief band with deep dentations which has served as a lug-handle. Ware fine and straw-coloured. Decorated on both sides and lip in a black colour.
5. K. 12001: 1006, lip. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on outside and lip in black.
6. K. 11999: 656, lip. Rim fragment of a basin. Ware fine and pale straw-coloured. Decorated on outside and lip in a brown, now faded colour.
7. K. 12001: 975, lip. Rim fragment of a basin. Ware fine and pale straw-coloured. Decorated on outside and lip in black.
8. K. 11999: 266, lip. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Surfaces somewhat carelessly smoothed. Decorated on outside and lip in a blackish brown colour.
9. K. 3232: 92, lip. Lip fragment of a basin, with small portion of inside. Ware fine and straw-coloured. Decorated on inside and lip in black.
10. K. 11999: 416, outside. Rim fragment of a bowl, strongly curved inwards at the mouth, and with a horizontal lug-handle about 40 mm below the rim. Ware fine, a little flawy, and straw-coloured. Decorated on outside in a dark brown, now much faded colour. Length of lug-handle 80 mm, breadth about 10 mm.
11. K. 11999: 415, outside. Rim fragment of a bowl with a horizontal, dentated lug-handle. Ware fine, surfaces straw-coloured, core greyish. Dark spots. Decorated on outside in a blackish brown colour.
12. K. 12001: 226, outside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on outside and margin in a pale reddish brown colour.
13. K. 3232: 93, outside. Belly fragment of a bowl or basin. Ware fine, outside brown, inside pale straw-coloured, core grey. Decorated on outside in a blackish brown colour.
14. K. 11999: 598, outside. Rim fragment of a bowl with a dentated, horizontal lug-handle. Ware fine and pale brick-red. Dark spots. Decorated on outside in black.
15. K. 3232: 94, outside. Belly fragment of a bowl or basin. Ware fine and pale reddish brown. Decorated on outside in a blackish brown colour.
16. K. 3232: 95, outside. Belly fragment of a bowl or basin. Ware fine and pale reddish brown. Decorated on outside in a dark brown colour.

PLATE 29.

1. K. 12001: 271 a, outside. Fragmentary bowl. Ware fine and pale straw-coloured. Decorated on outside in a dark brown colour.
2. K. 5904, outside. Reconstructed bowl. Ware fine and straw-coloured. Decorated on both sides in a blackish brown, partly faded colour. Height 66 mm. Mouth diameter 155 mm. Belly diameter 153 mm. Bottom diameter 66 mm. Thickness 4 mm.
3. K. 12001: 584 U, outside. Miniature bowl, fragmentary. Ware fine and straw-coloured. Decorated on both sides in black.
4. K. 11999: 451, outside. Upper part of a fairly small jar of exceptional type. Wide mouth with narrow, flat edge slanting inwards. Short neck curving outwards; moderately rounded belly. Ware fine and straw-coloured. Decorated on outside and margin in a blackish brown, partly faded colour. Mouth diameter 92 mm. Belly diameter approx. 130 mm.
5. K. 12001: 203, outside. Rim fragment of a bowl with a dentated, horizontal lug-handle. Ware fine, surfaces straw-coloured, core greyish. Decorated on both sides in a blackish brown colour.
6. K. 12001: 248, outside. Small fragmentary bowl with bottom. Ware fine and straw-coloured. Reddish spots. Decorated on outside in a dark brown colour.
7. K. 12001: 116, outside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on both sides in black.

8. K. 12001: 455, outside. Rim fragment of a small bowl. Ware fine, surfaces pale straw-coloured with dark spots, core greyish. Decorated on both sides in a blackish brown colour.
9. K. 12001: 584 A, outside. Fragmentary bowl. Ware fine, outside partly straw-coloured, partly brick-red, inside and core pale brick-red. Incrustations. Decorated on both sides in a dark brown colour.
10. K. 12001: 206, outside. Rim fragment of a bowl. Ware fine, outside pale brick-red, inside straw-coloured. Decorated on outside in a dark brown, now faded colour.
11. K. 12001: 236, outside. Rim fragment of a bowl. Ware fine and pale straw-coloured. Decorated on outside in black.
12. K. 12001: 120, outside. Rim fragment of a bowl. Ware fine, outside straw-coloured, inside and core reddish brown. Decorated on outside in a dark brown colour. Thickness 9 mm.
13. K. 11998: 510, outside. Fragment of a basin with small portion of lip. Ware fine and straw-coloured. Decorated on outside and lip in a blackish brown colour.
14. K. 12001: 35, outside. Rim fragment of a large bowl. Ware fine, surfaces straw-coloured, core greyish. Incrustations. Decorated on both sides in black.
15. K. 12001: 126, outside. Rim fragment of a bowl. Ware fine, surfaces straw-coloured, core partly brick-red, partly brown. Incrustations. Decorated on both sides in a blackish brown colour.

PLATE 30.

1. K. 12001: 584 Q, outside. Rim fragment of a bowl. Ware fine, outside straw-coloured, inside pale red. Incrustations. Decorated on outside in a dark brown colour.
2. K. 12001: 584 O, outside. Fragment of a basin, near rim. Ware fine, surfaces straw-coloured, core grey. Decorated on outside in a pale reddish brown colour.
3. K. 12001: 375, outside. Rim fragment of a bowl. Ware fine and straw-coloured. Incrustations. Both sides are smoothed, the outside also polished. Decorated on outside in a dark brown colour.
4. K. 12001: 273, outside. Rim fragment of a bowl. Ware fine and greyish brown with grey core where the wall is thickest. Incrustations. Decorated in a spacious way on outside and on the margin, in a blackish brown colour. Mouth diameter 195 mm.
5. K. 3232: 96, lip. Rim fragment of a small basin. Ware fine and straw-coloured. Incrustations. Decorated on lip only, in a blackish brown colour.
6. K. 12001: 1127, lip. Lip fragment of a basin, with small portion of side. Ware fine and straw-coloured. Decorated on lip in a blackish brown colour. Mouth diameter about 290 mm.
7. K. 3232: 97, lip. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on lip in a dark brown, now much faded colour.
8. K. 11999: 636, lip. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated in a dark brown colour, probably on lip only.
9. = Lip of Pl. 10: 6.
10. K. 11998: 224, lip. Rim fragment of a jar with lip. Ware fine, surfaces straw-coloured, core greyish. Incrustations. Decorated on lip and outside in a blackish brown colour. 1/3.
11. K. 11998: 218, lip. Rim fragment of a jar with lip. Ware fine, surfaces straw-coloured, core pale brick-red with grey middle. Incrustations. Decorated on lip and outside in a dark brown colour.
12. K. 12001: 1, inside. Rim fragment of a bowl. Ware fine and pale reddish brown. Incrustations. Decorated on both sides in a brown colour.
13. K. 11999: 152, lip. Rim fragment of a jar with lip. Ware fine, surfaces pale straw-coloured, core pale brick-red. Incrustations. Decorated on lip and outside in a dark brown colour.
14. K. 11998: 219, lip. Rim fragment of a jar with lip. Ware fine, surfaces straw-coloured, core brick-red. Decorated on lip and outside in a brown colour; décor damaged at places. 1/3.
15. K. 12001: 189, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on both sides in a brown colour.

PLATE 31.

1. K. 12001: 940, inside. Rim fragment of a basin. Ware fine and pale straw-coloured. Incrustations. Decorated on inside and lip in black.
2. K. 12001: 552, inside. Fragment of a small bowl with rim, broken off just above the base. Ware fairly fine, tempered with a moderate amount of small grains, and pale brown in colour. Surfaces unevenly smoothed and not polished. Decorated on inside and margin in a blackish, blurred, now faded colour. Height approx. 50 mm. Mouth diameter 115 mm. Thickness 2—5 mm.
3. K. 12001: 542, inside. Rim fragment of a bowl, thickening towards the flat rim. Ware fine and straw-coloured. Surfaces fairly carelessly smoothed. Thickness at rim 4 mm.
4. K. 11999: 215, lip. Rim fragment of a jar with lip. Ware fine, surfaces pale straw-coloured, core brick-red. Decorated on lip and outside in a blackish brown colour.
5. K. 11998: 191, outside. Rim fragment of a large bowl with accentuated profile. Ware fine, outside partly greyish brown, partly brick-red, inside brick-red, core grey. Decorated on outside in a dark brown colour.
6. = Outside of Pl. 11: 4.
7. K. 12001: 56, outside. Rim fragment of a large bowl. Ware fine, outside light grey (slip?), inside straw-coloured. Decorated on both sides in a blackish colour.
8. K. 12001: 584 E, inside. Rim fragment of a bowl. Ware fine, surfaces straw-coloured, core reddish. Decorated on both sides in a dark brown colour.
9. = Inside of Pl. 27: 5.
10. K. 11999: 34, lip and inside. Rim fragment of a plate with high rim. Ware fine, surfaces straw-coloured, core pale brick-red with greyish middle. Decorated on inside and lip in a dark brown colour. Breadth of lip 45 mm.
11. = Outside of Pl. 26: 6.
12. K. 12001: 1120, outside. Rim fragment of a basin. Ware fine, surfaces straw-coloured, core greyish. Decorated on both sides and lip in a dark brown colour. 1/3.

PLATE 32.

1. K. 11998: 217. Rim fragment of a jar with lip. Ware fine, surfaces pale straw-coloured, core brick-red. Incrustations. Decorated on lip and outside in a dark brown colour. 1/3.
2. K. 11999: 455, outside. Rim fragment of a bowl. Ware fine and brick-red. Dark spots. Decorated on outside in a dark brown colour.
3. K. 12001: 584 N, outside. Rim fragment of a small bowl. Outer surface fairly carelessly smoothed. Ware fine and straw-coloured. Decorated on outside and margin in a blackish colour. Thickness just below rim 5 mm.
4. K. 11998: 234, lip. Lip fragment of a basin. Ware fine, surfaces pale brick-red, core greyish. Decorated in a dark brown colour.
5. K. 11998: 236, lip. Rim fragment of a basin. Ware fine and pale brown. Incrustations. Decorated on outside and lip in a dark brown colour.
6. = Part of the neck in Pl. 12: 3.
7. K. 12001: 1474. Neck part of a vase with a vertical lug. Ware fine and pale brown. Incrustations. Decorated on lip and outside in a dark brown colour.
8. K. 12001: 1135, outside. Rim fragment of a basin. Ware fine, surfaces straw-coloured, core brick-red with grey middle. Decorated on outside and lip in a dark brown colour.
- 9 a, b. K. 11999: 728, —: 729. Two fragments of a vase, from different parts of shoulder. Ware fine and pale straw-coloured. Surface of outside well polished. Decorated in a dark brown colour. Thickness near neck 10 mm, the remainder 4—5 mm.
10. K. 11998: 165, inside. Rim fragment of a plate with high rim. Ware fine, surfaces greyish, core pale brick-red. Dark spots. Decorated on lip in a dark brown colour. Lip breadth 36 mm.

11. = Part of the neck in Pl. 16: 2.
12. K. 11999: 727. Fragment of a small vase (bottle), from strongly rounded part between shoulder and belly. Ware fine and straw-coloured. Incrustations. Decorated in a blackish brown colour. Thickness 3—5 mm.
13. K. 12001: 1504. Fragment of a vase, from neck and shoulder. Ware fine and straw-coloured. Incrustations. Decorated in a dark brown colour.
14. K. 12001: 199 b, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on both sides in a blackish brown colour.
15. K. 12001: 1166. Neck fragment of a vase. Ware fine and pale straw-coloured. Dark spots. Incrustations. Decorated in a dark brown colour.
- 16, 17. K. 12001: 1477,—: 1650. Two neck fragments of small vases. Ware fine and pale brown. Decorated in black.

PLATE 33.

1. K. 11241: 4. Belly fragment of a vase with portion of shoulder, and a vertical ring-handle. The latter is provided with a dentated relief-band. Ware fine and straw-coloured. Decorated in a dark brown colour.
2. K. 11998: 419. Lower part of a vase. Ware fine and straw-coloured. Decorated in a dark brown colour. Bottom diameter 56 mm.
3. K. 11999: 179. Fragment of a vase, from shoulder and belly. Ware fine, outside pale straw-coloured, inside greyish brown. Incrustations. Decorated in a dark brown colour.
4. K. 3232: 98. Fragment of a fairly small vase, from belly and lower part of shoulder. Ware fine and pale red. Decorated in a dark brown colour.
5. K. 12001: 645, lip. Rim fragment of a fairly small basin. 15 mm below the rim, a 3 mm wide, round hole is bored through the wall from both sides. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour.
6. K. 12001: 967, lip. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour.
7. = Lip of Pl. 27: 10.
8. K. 11998: 160, lip and inside. Rim fragment of a plate with high rim. Ware fine and reddish brown on the surfaces, brick-red to grey in the core. Incrustations. Decorated on both sides and lip in a dark brown colour. Lip breadth 34 mm.
9. = Lip of Pl. 22: 4. 1/2.
10. K. 11998: 731, lip and inside. Rim fragment of a plate with high rim. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour. Lip breadth 34 mm. Mouth diameter 284 mm. 1/3.
11. K. 12001: 963, lip. Lip fragment of a basin, with small portion of side. Ware fine and straw-coloured. Decorated on both sides and lip in a blackish, now partly faded colour.

PLATE 34.

- 1,2. K. 12001: 1057, lip and inside. Rim fragment of a fairly small basin. Ware fine and pale straw-coloured. Decorated on both sides and lip in dark brown. Mouth diameter 180 mm. Lip breadth 13 mm. Thickness: just below lip 2 mm, at lowermost fracture 4—5 mm.
3. K. 12001: 884. Rim fragment of a basin. Ware fine and pale brown. Incrustations. Decorated on both sides and lip in a blackish brown colour.
4. K. 12001: 887. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour.

5. K. 12001: 874. Rim fragment of a basin, lip only slightly rounded and of nearly even thickness. Ware fine and pale brown. Incrustations. Decorated on both sides and lip in a dark brown colour.
6. K. 11999: 261. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on outside and lip in a dark brown, now much faded colour.
7. K. 120001: 926. Rim fragment of a basin with unusually broad, relatively thick lip. In the angle between lip and belly there are additional clay lumps. Ware fine and straw-coloured. Decorated on inside and lip in a dark brown colour. Lip breadth 35 mm.
8. K. 3232: 100. Lip fragment of a basin with small portion of inside. Ware fine and straw-coloured. Decorated on lip in black.
9. K. 11999: 131. Large fragment of a basin with rim and a dentated, horizontal lug-handle. Ware fine and straw-coloured. Inner surface well polished, outer carelessly smoothed and polished. Decorated on outside and lip in a blackish brown, now faded colour. Length of lug 57 mm.
10. K. 12001: 935. Rim fragment of a basin with lip of even thickness, which is only slightly rounded. Ware fine and straw-coloured. Incrustations. Decorated on outside, lip and, just below the rim, on inside, in a dark brown colour. Lip: breadth 34 mm, thickness 9 mm. Thickness of belly 5 mm.
11. K. 11999: 161. Large fragment of a basin, with rim. Ware fine and straw-coloured. Incrustations. Decorated on outside and lip in a dark brown colour.
12. K. 12001: 1135. Rim fragment of a basin with a fairly narrow lip. Ware fine and pale brown. Decorated on outside and lip in a dark brown colour.
13. K. 12001: 964. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and lip in black.
14. K. 12001: 1067. Lip fragment of a basin, with very small portion of inside. Ware fine and straw-coloured. Decorated on inside and lip in black.
15. K. 3232: 99. Small rim fragment of a basin. Ware fine and pale reddish brown. Decorated on both sides and lip in a dark brown, now somewhat faded colour.
16. K. 12001: 1027. Lip fragment of a basin with small portion of side. The lip is only slightly rounded, and of nearly even thickness. Ware fine and straw-coloured. Decorated on inside and lip in a blackish brown colour.
17. = Lip of Pl. 20: 1. 1/2.
18. K. 11999: 655. Rim fragment of a basin. Ware fine, surfaces straw-coloured, core brick-red. Decorated on outside and lip in a brownish colour.
19. K. 12001: 1069. Small rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and lip in a brown colour.

PLATE 35.

1. K. 12001: 783, inside. Bottom fragment of a bowl or basin. Ware fine, surfaces straw-coloured, core brick-red. Dark spots. Painted décor. Bottom diameter 158 mm.
2. K. 12001: 662, inside. Bottom fragment of a bowl or basin. Ware fine and pale straw-coloured. Dark spots. Incrustations. Painted décor.
3. K. 12001: 660, inside. Bottom fragment of a bowl or basin. Ware fine, surfaces straw-coloured, core pale brick-red. Red spots. Incrustations. Painted décor. Bottom diameter 128 mm.
4. K. 12001: 1629. Neck fragment of a vase. Ware fine, surfaces straw-coloured, core pale brick-red. Dark spots. Incrustations. Painted décor.
5. K. 12001: 1225. Neck fragment of a vase. Ware fine, outside pale brown, inside straw-coloured, core brick-red. Incrustations. Decorated in a dark brown colour.
6. K. 12001: 1173. Neck fragment of a vase. Ware fine, surfaces straw-coloured, core greyish. Incrustations. Decorated in a dark brown colour.

7. K. 12001: 1206. Neck fragment of a vase. Ware fine, surfaces pale straw-coloured, core brick-red. Incrustations. Painted décor.
8. K. 12001: 1200. Neck fragment of a vase. Ware fine and greyish brown. Dark spots. Incrustations. Painted décor.
9. K. 12001: 1514. Neck fragment of a vase. Ware fine and pale straw-coloured. Dark spots. Incrustations. Painted décor.

PLATE 36.

1. K. 12001: 746, outside. Rim fragment of a basin. Ware fine, inside straw-coloured, outside pale brown, core greyish. Incrustations. Painted décor on both sides and lip.
2. K. 12001: 938, outside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour.
3. K. 12001: 1355. Belly fragment of a vase with a ring-handle. Ware fine and straw-coloured. Dark spots. Incrustations. Painted décor. 1/3.
4. K. 12001: 1014, outside. Rim fragment of a basin. Ware fine, surfaces pale straw-coloured, core brick-red. Decorated on both sides and lip in a dark brown colour.
5. K. 12001: 1254. Neck fragment of a vase. Ware fine and pale straw-coloured. Dark spots. Incrustations. Painted décor on lip and outside.
6. K. 12001: 1223. Neck fragment of a vase. Ware fine, surfaces straw-coloured with red spots, core brick-red. Painted décor on lip and outside.
7. K. 12001: 584 S, outside. Bowl-shaped pottery object, possibly foot of a stem cup. Ware fine, outside pale straw-coloured with reddish spots, inside pale brick-red, core brownish. Below the rim, two bi-conical holes. Painted décor on outside in a dark brown colour.
8. = Outside of Pl. 26: 5.
9. K. 11999: 168. Belly fragment of a vase with a ring-handle. Ware fine and straw-coloured. Incrustations. Painted décor. 1/3.
10. = Outside of Pl. 34: 2.
11. K. 11999: 334. Base fragment, possibly of a vase. Ware fine, outside straw-coloured, inside and core brick-red. Painted décor on outside.
12. K. 11999: 196. Upper part of a very small bottle or jar with rim. Uncommon shape. Ware fine and straw-coloured. Decorated on outside and lip in a blackish colour. Inner mouth diameter 55 mm.
13. K. 11999: 258. Rim fragment of a jar with lip. Ware fine, surfaces straw-coloured, core greyish. Painted décor on lip and outside.
14. K. 11999: 144. Rim fragment of a jar with lip. Ware fine, outside pale brown, inside straw-coloured, core brick-red. Dark spots. Painted décor on lip and outside.

PLATE 37.

1. K. 12001: 1211. Upper part of a vase. Ware fine, outside straw-coloured, inside and core brick-red. Incrustations. Painted décor.
2. K. 11999: 227. Rim fragment of a jar with lip. Ware fine, outside greyish, inside pale straw-coloured. Painted décor on lip and outside.
3. K. 12001: 1251. Neck fragment of a vase. Ware fine and straw-coloured. Incrustations. Painted décor on lip and outside.
4. K. 11999: 755. Upper part of a vase. Ware fine and greyish. Dark spots. Painted décor.
5. K. 11998: 1281. Upper part of a vase. Ware fine and pale straw-coloured. Incrustations. Painted décor.
6. K. 12001: 1247. Neck fragment of a vase. Ware fine and straw-coloured. Incrustations. Painted décor.

7. K. 11999: 435. Fragment of a small, narrow-necked vase, from shoulder and base of neck. Ware fine and brownish grey. Decorated in a dark brown colour which is partly blurred. Thickness 3—4 mm.
8. K. 11241: 6. Fragment of a fairly small vase, from bend between shoulder and belly. Ware fine and pale brown. Decorated in a dark brown colour. Thickness 4—5 mm.
9. = Outside of Pl. 45: 11. 1/3.
10. K. 12001: 765, inside. Bottom fragment of a bowl or basin. Ware fine, surfaces straw-coloured, core greyish. Incrustations. Painted décor. Bottom diameter 128 mm.
11. K. 11999: 154, lip. Rim fragment of a basin. Ware fine, surfaces straw-coloured, core brick-red. Painted décor on outside and lip.
12. K. 11998: 523. Lip fragment of a basin with very small portion of side. Ware fine and straw-coloured. Decorated on outside and lip in a dark brown colour.
13. K. 12001: 952. Fragment of rim of a basin, with small portion of side. Ware fine and straw-coloured. Decorated on inside and lip in a blackish colour.
14. K. 11999: 270. Rim fragment of a smallish basin of uncommon shape. Inferior make. Side nearly vertical. Ware fine and straw-coloured. Surfaces carelessly smoothed; flaws on interior surface. Decorated on outside and lip in a blackish brown colour. Lip breadth 12 mm. Thickness 4.5 mm.
15. K. 11998: 235. Rim fragment of a basin, only small portion of side remaining. Lip nearly flat, slanting a little downwards, and of even thickness. Ware fine and straw-coloured. Decorated on outside and lip in a dark brown colour.

PLATE 38.

1. K. 11999: 639, lip. Rim fragment of a basin. Ware fine and pale brick-red. Painted décor on outside and lip.
2. K. 11999: 638, lip. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Painted décor on outside and lip.
3. K. 11999: 264. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on outside and lip in a dark brown colour.
4. K. 11998: 238. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on outside and lip in black.
5. K. 12001: 1137. Rim fragment of a basin. Ware fine and pale straw-coloured. Decorated on outside and lip in black.
6. K. 11999: 232. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on outside and lip in a blackish colour.
7. K. 12001: 1014. Rim fragment of a basin. Ware fine and pale straw-coloured. Decorated on both sides and lip in a brown colour.
8. K. 12001: 1053. Rim fragment of a small basin-like vessel, thickening towards the mouth; the edge of the latter has been drawn out a little towards the outside. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour. Lip breadth 11 mm. Thickness at a point 40 mm below mouth: 2 mm.
9. = Pl. 36: 10. In this case, reproduced to show the décor on the lip.
10. K. 12001: 691, lip. Rim fragment of a basin. Ware fine and pale straw-coloured. Painted décor on both sides and lip.
11. K. 11999: 312, lip. Rim fragment of a basin. Ware fine and brown. Decorated in a blackish colour.
12. K. 11999: 657. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on outside and lip in a dark brown colour.

13. K. 3232: 102, lip. Small rim fragment of a basin. Ware fine and pale straw-coloured. Decorated on both sides and lip in black.
- 14, 15. K. 12001: 690, lip, and inside. Rim fragment of a basin. Ware fine and pale straw-coloured. Incrustations. Painted décor on both sides and lip.
16. = Lip of Pl. 20: 9.
17. K. 12001: 1143, lip. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on outside and lip in a blackish colour.
18. K. 11999: 647, lip. Rim fragment of a basin. Ware fine and pale reddish brown. Decorated on outside and lip in a dark brown colour.

PLATE 39.

1. K. 12001: 584 R, outside. Fragment of a bowl with rim. Ware fine and straw-coloured. Painted décor.
2. K. 11999: 553. Fragment of a vessel, either portion of a vase shoulder with uncommon profile (slightly S-curved), or a large lid. Ware fine and straw-coloured. Incrustations. Decorated in a blackish brown colour. Thickness 7—8.5 mm.
3. K. 12001: 223. Rim fragment of a bowl, thickening towards the mouth. Margin slanting towards inside. Ware fine and straw-coloured. Decorated in a dark brown colour on the outside, and on the inside of the margin.
4. K. 12001: 62, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Painted décor on both sides.
5. K. 12001: 171, —: 584 W, —: 584 X. Fragmentary bowl. Ware fine and pale brown. Surfaces fairly carelessly smoothed. Decorated on both sides in a dark brown colour, which is much faded. Height 53 mm. Mouth diameter 140 mm. Fig. 8.
6. K. 12001: 1208. Upper part of a vase. Ware fine, surfaces straw-coloured, core pale brick-red. Painted décor.
7. K. 12001: 523, inside. Rim fragment of a fairly small bowl. Ware fine and greyish brown. Decorated in a black colour on both sides. Thickness 3—4 mm.
8. K. 12001: 584 V, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on both sides in a blackish brown colour.
9. K. 12001: 509, inside. Small rim fragment of a bowl. Ware fine and pale brown. Decorated on both sides in a blackish brown colour.
10. K. 11998: 534. Belly fragment of a basin or vase. Ware fine and greyish brown. Well polished on both sides. Decorated on outside in a blackish brown colour. Thickness 3—4 mm.
11. K. 12001: 1113, inside. Small belly fragment of a bowl or basin. Ware fine and straw-coloured. Decorated on inside in a blackish colour. Thickness 3.5 mm.
12. K. 11998: 654. Small belly fragment of a basin. Ware fine and pale reddish brown. Decorated on outside in a dark brown colour.
13. K. 3232: 103. Belly fragment of a fairly small vase, near bend of shoulder. Ware fine and pale brown, tempered with a small amount of fine grains. Decorated in black.
14. K. 11998: 529. Belly fragment, probably of a vase. Ware fine and pale brown. Inside fairly uneven. Decorated in a blackish brown colour.
15. K. 3232: 104. Belly fragment of a vase. Ware fine and partly pale reddish brown, partly grey. Dark spots. Decorated in a dark brown colour.
16. K. 12001: 865. Rim fragment of a basin, with small portion of side. Ware fine, straw-coloured to greyish brown. Traces of décor on inside and lip, painted in a dark brown colour.
17. K. 12001: 950. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on both sides and lip in a blackish colour.

18. K. 12001: 862. Rim fragment of a basin, with only a small portion of side remaining. Ware fine and straw-coloured. Decorated on inside and lip in a dark brown colour.
19. K. 12001: 863. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on both sides and lip in a dark brown colour.

PLATE 40.

1. K. 11999: 230, outside. Rim fragment of a basin with nearly vertical side. Ware fine and pale brown. Decorated in a dark brown colour on the outside and the lip.
2. K. 11999: 240, outside. Fragment of a basin. Ware fine and yellowish white. Painted décor on outside.
3. K. 11999: 667. Rim fragment of a basin with only slightly rounded side and strongly curved lip. A low rib-like swelling runs around the rim on the outside, just below the lip. Ware fine with a small amount of small particles as tempering material; surfaces pale brown, core dark grey. Decorated on outside and lip in a blackish colour.
4. K. 11999: 257, outside. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on outside and lip in a blackish brown colour.
5. K. 11999: 668, outside. Rim fragment of a basin, with a narrow, thick lip. Ware fine, a little flawy, and straw-coloured. Decorated on outside and lip in a dark brown colour.
6. K. 11999: 618. Belly fragment of a vase or jar. Ware fine and pale brown. Decorated in a dark brown colour.
7. K. 11999: 312, outside. Rim fragment of a fairly small basin. Ware fine and straw-coloured. Decorated in a blackish brown colour.
8. K. 11998: 493, outside. Rim fragment of a basin with lip of nearly even thickness. Ware fine and pale brown except that the core is grey at the thickest parts. Decorated on outside and lip in a blackish brown colour.
9. K. 11999: 153, inside. Rim fragment of a basin. Ware fine and pale brick-red. Painted décor on both sides and lip.
10. K. 12001: 1519. Belly fragment of a vase. Ware fine and straw-coloured. Incrustations. Painted décor. 1/3.
11. K. 12001: 1516. Shoulder fragment of a vase (base of neck to the right). Ware fine, outside pale straw-coloured, inside pale brick-red, core brick-red. Dark spots. Incrustations. Painted décor. 1/3.
12. K. 11241: 10, outside. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on outside and lip in a dark brown colour.
13. K. 12001: 671, inside. Bottom fragment of a bowl or basin. Ware fine, surfaces straw-coloured, core pale brick-red. Red and dark spots. Painted décor. Bottom diameter 78 mm.
14. K. 11999: 473. Belly fragment of a vase. Ware fine and straw-coloured. Incrustations. Painted décor.
15. K. 11998: 579, —: 639. Two belly fragments of a basin, with base of lip remaining. Ware fine and reddish brown. Decorated on outside in black.
16. K. 11999: 620. Shoulder fragment of a vase. Ware fine and straw-coloured. Dark spots. Incrustations. Painted décor. 1/3.

PLATE 41.

1. = Inside of Pl. 27: 2.
2. K 12001: 549, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Incrustations. Decorated on both sides in a brown colour.
3. K. 12001: 30, inside. Fragmentary bowl. Ware fine, surfaces straw-coloured, core brick-red. Incrustations. Painted décor on both sides. Height 49 mm. Mouth diameter 168 mm. Bottom diameter 82 mm. Thickness: mouth 5 mm, belly 7 mm, bottom 5 mm.

4. K. 12001: 100, inside. Rim fragment of a bowl. Ware fine and yellowish white. Dark spots. Painted décor on both sides.
5. K. 12001: 28, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated in a brown colour on both sides.
6. K. 11999: 712. Shoulder fragment of a small vase (bottle) of uncommon shape; fairly poor execution. Ware fine but a little flawy, and pale brown. Decorated in black. Thickness 3.5—5 mm.
7. K. 12001: 80, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Decorated on both sides in a dark brown colour, now partly discoloured into a greyish white shade.
8. K. 11999: 29 b. Belly fragment of a vase. Ware fine, surfaces pale straw-coloured, core brick-red. Incrustations. Painted décor.
9. K. 11999: 146. Rim fragment of a jar with lip. Ware fine, surfaces straw-coloured, core brick-red. Incrustations. Painted décor on lip and outside. 1/3.
10. K. 12001: 584 B, inside. Fragmentary bowl with bottom. Ware fine and pale brick-red. Painted décor on both sides.
11. K. 11999: 212. Rim fragment of a jar with lip. Ware fine, surfaces pale straw-coloured, core brick-red. Incrustations. Painted décor on lip and outside.
12. K. 11999: 180. Rim fragment of a jar with lip. Ware fine, surfaces straw-coloured, core brick-red with grey middle. Incrustations. Painted décor on lip and outside. 1/3.

PLATE 42.

1. K. 12001: 190, inside. Rim fragment of a bowl. Ware fine, surfaces straw-coloured, core pale greyish. Painted décor on both sides.
2. = Inside of Pl. 29: 7.
3. K. 12001: 365, outside. Rim fragment of a bowl. Ware fine and straw-coloured. Dark spots. Painted décor on outside.
4. K. 12001: 436, inside. Rim fragment of a bowl. Ware fine and pale brown. Painted décor on both sides.
5. K. 11999: 741, outside. Rim fragment of a jar with lip. Ware fine, outside yellowish white, inside pale straw-coloured, core pale brick-red. Incrustations. Painted décor on lip and outside.
6. K. 11241: 22, outside. Rim fragment of a jar of uncommon shape, somewhat similar to the main type of basins. Belly moderately rounded; lip horizontally everted, of nearly even thickness, and planed-off at the inside. Ware fine with a small amount of fine tempering material, and greyish brown in colour. Incrustations. Decorated on outside and lip in a now pale reddish brown colour, partly covered with a dark coating. Thickness 4—8 mm.
7. K. 12001: 584 Y, outside. Rim fragment of a bowl. Ware fine and straw-coloured. Polished on outside only. Decorated on both sides in black. Mouth diameter about 180 mm.
8. K. 12001: 1731. Shoulder fragment of a vase. Ware fine, surfaces straw-coloured, core greyish. Incrustations. Painted décor.
9. K. 12001: 1636. Neck fragment of a large vase. Ware fine and straw-coloured. Decorated in a dark brown colour.
10. K. 11241: 18. Shoulder fragment of a fairly small vase. Ware fine and pale greyish. Decorated in a blackish brown colour. Thickness 5—7 mm.
11. K. 12001: 469, outside. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Decorated on both sides and lip in a black colour.
12. K. 12001: 74. Bottom fragment of a basin or bowl. Ware fine and straw-coloured. Both surfaces are smoothed but only outside is polished. Decorated on inside in a blackish colour, the pattern extending into the cavetto. Bottom diameter 68 mm.
13. K. 11998: 418, outside. Base fragment of a vessel. Ware fine and pale straw-coloured. White and dark spots. Painted décor on outside. Bottom diameter 92 mm.

14. K. 11998: 417, outside. Base fragment of a vessel. Ware fine, outside straw-coloured, inside and core brownish. Incrustations. Painted décor on outside. Bottom diameter 92 mm.
15. K. 11241: 20. Fragment of a vase (or jar?), from shoulder or belly near the bend. Ware fine and pale brown. Decorated in a blackish brown colour.

PLATE 43.

1. K. 12001: 594. About half of a miniature bowl (reconstructable). Ware fine and straw-coloured. Surfaces carelessly smoothed. Decorated on both sides in a blackish colour. Height 30 mm. Mouth diameter 74 mm. Bottom diameter 33 mm. Thickness of side 3—4 mm, of bottom at centre 2 mm.
2. K. 12001: 804, inside. Bottom fragment of a bowl or basin. Ware fine, surfaces straw-coloured, core brick-red. Bottom diameter 78 mm.
3. K. 12001: 828. Bottom fragment of a bowl or basin, showing part of a centred décor on inside. Ware fine and straw-coloured. Interior surface not quite even. Decorated in a dark brown colour. Thickness 5—6 mm.
4. K. 11241: 1. Fragment of a vase, probably from shoulder near the bend of the belly. Ware fine and straw-coloured, outer surface of a paler shade. Decorated in a dark brown colour, now much faded.
- 5 a, b. K. 11999: 711, —: 715. Two fragments of a smallish vase of uncommon shape, from shoulder. Ware fine, outside pale brown, inside straw-coloured, core grey. Decorated in a blackish brown colour. Thickness 3—6 mm.
6. K. 12001: 1121 B. Small fragment from belly of a vessel, probably a bowl or basin. Both surfaces well smoothed. Ware fine and pale brown. Decorated on outside in a blackish colour.
7. K. 11999: 320. Fragment of a vase, from bend between shoulder and belly. Ware fine and pale brown. Decorated in black.
8. K. 11999: 109. Fragment of a vase with thin wall, probably from shoulder. Inferior make. Ware fine and pale brown. Incrustations. Decorated in a blackish colour. (Mortuary vessel of Pan-shan or Ma-ch'ang type?). Thickness 2.5—4 mm.
9. K. 12001: 798. Bottom fragment of a bowl or basin, showing main part of a centred décor on the inside. Cavetto begins at each of the two short ends of the fragment. Ware fine and straw-coloured. Decorated in a dark brown colour. Thickness 4 mm.
10. K. 12001: 1141, outside. Rim fragment of a basin. Ware fine and straw-coloured. Decorated on outside and lip in a blackish brown colour.
11. K. 12001: 584 AA, inside. Base fragment of a bowl or basin. Ware fine and straw-coloured. Decorated on inside in a blackish colour.
12. K. 12001: 1710. Belly fragment of a vase. Ware fine, outside straw-coloured, inside pale greyish brown. Incrustations. Painted décor. 1/3.
13. K. 11999: 752. Large, rounded fragment of a vase. Ware fine, a little flawed on account of fine grains used as tempering material, and straw-coloured. Decorated in a dark brown colour. Thickness 5—6 mm.

PLATE 44.

1. K. 3232: 105, outside. Belly fragment of a basin, near rim. Ware fine and pale reddish brown. Decorated on outside in a dark brown, now somewhat faded colour.
2. K. 3232: 106. Shoulder fragment of a small vase of exceptional type; shoulder nearly straight and, apparently, much slanting. Ware fine and pale brick-red. Decorated in black.
3. K. 11998: 198. Fragment of a jar with lip. Ware fine and brick-red. Incrustations. Painted décor.
4. K. 3232: 107, outside. Small fragment of an unidentified object (foot of stem cup?), strongly rounded. Thin at the perforated margin, gradually thickening towards the other, broken-off end

- which is 9 mm thick. Ware fine and straw-coloured. Dark spots. Decorated in a dark brown colour.
5. K. 12001: 1448. Shoulder fragment of a small vase or jar, with base of neck remaining. Ware fine, very hard, inside and core grey, and surface of outside greyish brown. Decorated in black.
 6. K. 11241: 11. Shoulder fragment of a vase, from lower part. Ware fine and pale brown. Decorated in black.
 7. K. 11998: 658. Small fragment of a vessel, probably from shoulder of a vase. Ware fine and pale reddish brown. Decorated in a dark brown colour.
 8. K. 3232: 108. Small fragment of a vase, from belly near shoulder. Ware fine and pale brown, tempered with a small amount of fine grains. Decorated in a dark brown colour.
 9. K. 11999: 732. Fragment of a vase, probably from lower part of shoulder (cf. the large specimen in Pl. 10: 6). Ware fine and straw-coloured. Decorated in a dark brown colour. Thickness 4—5 mm.
 10. K. 11998: 643. Small, strongly rounded fragment, possibly from a small vase (bottle). Ware fine and straw-coloured. Both surfaces are smooth; the outside is, besides, polished and decorated in a blackish brown colour. Thickness 4 mm.
 11. K. 11999: 108. Fragment of a vase, probably from shoulder. Ware fine and greyish brown. Surface of outside well polished. Decorated in a blackish colour.
 12. K. 12001: 1528. Fragment of a fairly small vase, from shoulder near base of neck. Ware fine and straw-coloured, paler on the outside. Decorated in a dark brown colour of two shades. Thickness: base of neck 8 mm, lowermost edge of fragment 4—5 mm.
 13. K. 3232: 109. Fragment of a vase, from shoulder or belly. Ware fine and pale reddish brown. Decorated in a dark brown colour.
 14. K. 11998: 216. Rim fragment of a fairly small basin. Rounded angle between lip and outside of belly. Ware fine and pale straw-coloured. Incrustations. Decorated on outside and lip in a dark brown colour.
 15. K. 3232: 110. Fragment of a fairly small vase, belly and small portion of shoulder. Ware fine, surfaces straw-coloured, core greyish. Decorated in a blackish brown colour.
 16. K. 3232: 111. Fragment of a fairly small vase, from belly or shoulder (the bend is along the right-hand edge). Ware fine and pale brown; tempered with a small amount of fine grains. Decorated in a blackish brown colour.
 17. K. 3232: 112. Fragment of an unidentified vessel, probably a vase or jar. Ware fine and pale brick-red. Decorated in a blackish brown colour.
 18. K. 11999: 325. Belly fragment of a small vase (bottle) of uncommon shape. Inferior make. Main part (= belly) has a nearly straight cross-section. Ware fine and straw-coloured except that the core is grey near the base. Decorated in black. Thickness irregular, varying between 2.5 and 5 mm.
 19. K. 11999: 705. Fragment of a vase, from bend between shoulder and belly. Ware fine, surfaces straw-coloured, core grey. Decorated in black.
 20. K. 3232: 113. Belly fragment of an unidentified vessel, probably a vase. Ware fine and greyish brown. Decorated in a dark brown colour.

PLATE 45.

(Scale 1/4.)

1. K. 11241: 14. Shoulder fragment of a vase, with portion of neck. Ware fine, very hard, pale brown on outside (to a depth of 2 mm of the wall) and on upper part of inside, grey in core and on lower part of interior surface. Additional clay on inside around base of neck. Decorated in black. Thickness : shoulder 6 mm, base of neck 8 mm.

2. K. 11999: 737. Shoulder fragment of a vase. Ware fine, surfaces pale straw-coloured, core brick-red. Dark spots. Incrustations. Painted décor.
3. K. 11998: 432. Shoulder fragment of a vase, with small portion of neck. Ware fine and pale brown. Decorated in a brown colour.
4. K. 11241: 12. Large shoulder fragment of a vase with portion of neck. Ware fine and pale straw-coloured, the core grey at the thickest parts. Decorated in black. Approx. neck diameter 100 mm. Thickness: mainly about 4 mm, at base of neck 9 mm.
5. K. 12001: 1318. Large fragment of a vase, shoulder and upper part of belly. Broken off along neck base where the exterior surface is coated with a whitish substance (lime?) to a thickness of 1.5—2 mm. Ware fine and straw-coloured. Incrustations. Decorated in a dark brown colour. Thickness 5—6 mm.
6. K. 11999: 136. Belly fragment of a vase, a vertical ring-handle just below the bend of the shoulder. Fairly poor make. Cross-section apparently oval. Ware fine and straw-coloured. Decorated in black. Thickness 3—6 mm.
7. K. 11999: 13. Belly fragment of a vase. Part of a vertical ring-handle. Ware fine and straw-coloured. Incrustations. Painted décor.
8. K. 11999: 24. Shoulder fragment of a vase. Ware fine, surfaces pale brick-red, core greyish. Dark spots. Incrustations. Painted décor.
- 9 a, b. K. 11999: 746, 747, outside. Two fragments of a basin (or jar?). Ware fine, surfaces pale straw-coloured, core pale brick-red. Dark spots. Incrustations. Painted décor.
10. K. 12001: 1348. Belly fragment of a vase. Ware fine, outside pale straw-coloured, inside and core brick-red. Dark spots. Incrustations. Painted décor.
11. K. 12001: 764, inside. Fragment of a large stem cup. Ware fine, surfaces straw-coloured, core greyish. Incrustations. Painted décor on both sides in a blackish brown colour. (Cf. Pl. 37: 9).
12. K. 11241: 3. Large belly fragment of a vase, with portion of shoulder and part of a ring-handle. Cross-section of side is slightly S-curved. Ware fine and straw-coloured. Decorated in black. Thickness 4—7 mm.
13. K. 12001: 1716. Belly fragment of a vase. Ware fine and straw-coloured. Dark spots. Incrustations. Painted décor.
14. K. 11241: 7. Large fragment of a vase, from lower part of belly. Cross-section of side nearly straight. Ware fine and straw-coloured. Decorated in a dark brown colour, now partly faded into a whitish shade. Thickness 4—5.5 mm.
15. K. 12001: 1712. Belly fragment of a vase. Ware fine, outside straw-coloured, inside paler. Dark spots. Incrustations. Painted décor.

PLATE 46.

1. K. 12001: 1515. Fragmentary vase with vertical ring-handle. Ware fine and pale straw-coloured. Dark spots. Painted décor in dark brown and (the «saw-toothed» bands) reddish brown. 1/3.
2. K. 12001: 1527. Small fragment of a vessel, probably from shoulder or belly of a vase. Ware fine, a little porous, fairly soft, and pale greyish brown. Decorated on the polished outside in a blackish brown colour. Thickness 3—5 mm.
3. K. 12001: 1526. Small fragment of a vase, from shoulder near base of the neck. Ware fine and straw-coloured. Traces of décor showing fringes of short lines protruding from the sides of bands. Colour of painting faded and partly covered with incrustations; original colour probably violet on brown. Thickness 6—7 mm.
4. K. 12001: 1525. Belly fragment of a vase, probably the same as the following. The décor consists of black «saw-toothed» bands alternating with simple violet bands. Thickness 7 mm.
5. K. 12001: 1524. Belly fragment of a vase. Ware fine and straw-coloured. Decorated on outside in two colours: black «saw-toothed» bands alternating with simple bands in dark violet. (Mortuary vessel of the Pan-shan type?). Thickness 4—6.5 mm.

6. K. 11998: 123. Rim fragment of a bowl. Ware fine and greyish brown.
7. K. 11999: 3, inside. Fragmentary basin with bottom. Ware fine, surfaces straw-coloured with grey spots, core pale brick-red with grey middle. Lip breadth 27 mm. Height 90 mm. Mouth diameter 280 mm. Bottom diameter 128 mm. Thickness: rim 6 mm, belly 12 mm, bottom 9 mm. 1/3.
8. K. 11999: 2. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Below the rim, a horizontal lug-handle.
9. K. 11998: 388. Neck fragment of a vase. Ware fine and brick-red. Incrustations.
10. K. 11998: 383. Neck fragment of a vase. Ware fine, outside grey, inside pale brown. Dark spots. Incrustations. Horizontal, dentated relief band.
11. K. 11999: 440. Neck fragment of a vase. Ware fine and pale straw-coloured. Dark spots. Incrustations.
12. K. 11998: 236. Neck fragment of a vase. Ware fine and straw-coloured. Dark spots. Incrustations.
13. K. 11998: 85. Upper part of a small vase (bottle) with short, slightly everted neck. Surface of shoulder well smoothed, neck roughly chamfered. Ware fine and greyish brown with dark spots. Incrustations. Greatest diameter (bend) 103 mm. Thickness: neck 5 mm, belly 6 mm.
14. K. 11998: 947. Miniature cup, complete, with curved-out lip. Ware fairly fine, tempered with some large white grains, and light brown. Surfaces smooth. Height 33 mm. Mouth diameter 30 mm. Bottom diameter 20 mm. Thickness of belly approx. 4 mm.
15. K. 11999: 441. Reconstructed miniature cup. Ware fine and pale straw-coloured. Dark spots. Height 28 mm. Mouth diameter 64 mm. Bottom diameter 38 mm.
16. K. 11999: 438. Fragment of a miniature bowl with bottom. Ware fine and straw-coloured. Bottom diameter 30 mm.

PLATE 47.

1. K. 11998: 145. Upper part of a jar of uncommon shape. Wide mouth, with very short neck which is slightly curved outwards (the rim = the lower, left-hand edge). Shoulder only slightly rounded, meeting belly at a somewhat rounded, wide angle. Lower part roughly smoothed. Ware fine with a small amount of fine particles as tempering material, and reddish brown in colour. Incrustations. Mouth diameter about 90 mm. Thickness 6 mm.
2. K. 11999: 432. Fragment of a pottery disc of even thickness, perforated with very large, rounded holes. Bottom of cooking-vessel? Ware fine and straw-coloured. Polished on both sides. All edges broken off. Thickness 7 mm.
3. K. 11998: 92. Rim fragment of a jar with knob-handle. Ware fine and straw-coloured. Cord-impressions on the knob.
4. K. 2354. Neck fragment of a vessel of unidentified shape, possibly an elongated container with pointed bottom (according to J. G. Andersson. Cf. Researches, p. 93). Ware fine and pale brick-red. Neck smooth, shoulder part covered with cord-impressions. Diameter of widest part of neck 88 mm. Inner diameter of mouth 49 mm. Thickness 4—6 mm.
5. K. 11998: 134. Rim fragment of a jar (or vase) with flaring rim. Three small knobs placed triangle fashion. Ware fine, surfaces straw-coloured, core greyish. Cord-impressions.
6. K. 11998: 104. Belly fragment of a vase or jar. Ware fairly fine and brownish grey. Dark spots. Cord-impressions.
7. K. 11159: 57. Belly fragment of a vase with ring-handle. Cord-marked before handle was attached. Ware pale brown, tempered with a fairly large amount of grains of different kinds. Thickness 5 mm.
8. K. 11998: 151. Fragment of a solid leg of a tripod vessel. Ware fine and brick-red. Dark spots. Cord-impressions.

9. K. 11998: 139. Hollow leg of a Li tripod. Ware fine and straw-coloured. Dark spots. Cord-impressions.
10. K. 11998: 137. Hollow leg of a Li tripod. Ware fine, outside straw-coloured, inside greyish, core partly straw-coloured, partly greyish. Cord-impressions.

PLATE 48.

1. K. 11998: 118. Fragmentary large basin with margin at one place drawn out into a spout. Ware fine and grey. Horizontal lug-handle. Incrustations. Cord-impressions. Height 174 mm. Bottom diameter 156 mm. 1/3.
2. K. 11998: 129. Rim fragment of a basin with part of a cylindrical spout. Ware fairly fine and dark grey. A relief band around base of the spout. Cord-impressions.
3. K. 11998: 486. Fragment of a vase with portion of shoulder and neck. Ware of two kinds, both brick-red: neck fairly fine and homogenous above its base, then gradually coarser through tempering with large, mostly white grains, which is characteristic of the lower part of the specimen. Painted décor in black on smooth, polished neck; cord-impressions on shoulder. Relief band around base of neck. Thickness 5—7 mm.
4. K. 11998: 28. Belly fragment of a large vessel, a vase or jar. Ware of two kinds: upper, smooth part with painted décor in dark brown is fine and homogenous, whilst lower, cord-marked part is made of the same kind of clay tempered with large, mostly white grains. Colour of both parts brick-red with pale brown surfaces. Cord-impressions also on the flat horizontal relief bands. Thickness 4.5—7 mm.
5. K. 11998: 19. Large fragment of a vase, from shoulder and upper part of belly. Ware of two kinds, both pale brown: uppermost part with decorated, polished surface is fine and homogenous, the main part below, with fine cord-impressions, is moderately tempered with mostly white grains. Just below widest part of belly, a narrow, horizontal relief band. Thickness 7—9 mm.
- 6 a, b. K. 11998: 132, K. 11999: 470. Portion of rim, and spout of a basin. Ware of two kinds: polished rim is fine, spout and cord-marked part of belly fairly coarse, richly tempered. Surfaces of both parts straw-coloured, core reddish brown. Two bi-conical holes.
7. K. 11998: 17. Neck fragment of a vase with wide, low neck. Surfaces of neck smooth, base of neck covered with cord-impressions. Lip curved outwards. Ware tempered with fine grains, well levigated, greyish brown. Mouth diameter about 140 mm. Thickness 5—7 mm.

PLATE 49.

1. K. 11998: 116. Fragmentary large basin with a spout. Ware coarse, surfaces straw-coloured, core brick-red. Cord-impressions, and painted décor on outside, in a dark brown colour. Around base of spout a relief band. 1/3.
2. K. 11998: 130. Part of a spout of a basin, with portion of rim. Ware coarse, surfaces straw-coloured, core dark grey. Dark spots. Around base a relief band. Traces of décor on outside of rim, in a dark brown colour. Cord-impressions.
3. K. 11998: 117. Fragmentary large basin. Horizontal lug-handle. Ware coarse and straw-coloured. Incrustations. Decorated on outside in a dark brown colour. Cord-impressions. 1/3.
4. K. 11998: 105. Upper part of a small bottle of exceptional type, with a small, vertical ring-handle. Hand-made, possibly finished off at the mouth with a turn-table. Lower part of neck strengthened at inside. Wall relatively thick, thinning towards the mouth. Ware fine and light grey. Smooth on outside. Mouth diameter 34 mm. Belly diameter at widest part (near the handle) about 60 mm. Thickness of belly 6—9 mm.
5. K. 11998: 87. Belly fragment of a vase. Ware fine, outside partly reddish, partly grey, inside grey, core brick-red with grey middle. Around belly a horizontal, dentated rib.

6. K. 11998: 77. Belly fragment of a vase. Ware fine and dark grey. Incrustations. A horizontal, triangle-sectioned rib.
7. K. 5929. Reconstructed cup with horizontal lip. Ware fine and grey, unctuous and with some dark spots. Mouth diameter 102 mm. Bottom diameter 48 mm. Height 44 mm.
8. K. 11998: 81. Rim fragment of a bowl. Ware fine and grey. Incrustations.
9. K. 11998: 78. Rim fragment of a basin. Ware fine and grey.
10. K. 3232: 115. Fragment of a flat object of dark grey pottery, probably the perforated bottom of a cooking-vessel. Thickness 5 mm.
11. K. 11999: 447. Base fragment of a vase or jar, with two rounded steam-holes. Ware fine, surfaces straw-coloured, core grey. Incrustations; a thick, white coating on inside (lime?). Bottom diameter about 120 mm. Thickness: belly 7 mm, bottom 6 mm.
12. K. 3232: 114. Fragment of a ring-handle (or a pottery ring?). Well polished, grey ware. D-shaped cross-section. Thickness 9 mm.

PLATE 50.

1. K. 11998: 3. Rim fragment of a jar of exceptional type, with strongly bulging belly and a narrow, curved lip. Ware fairly fine, tempered with a small amount of medium-sized grains; surfaces yellowish (probably discoloration), core greyish white. Dark spots and incrustations. Plain with some irregularities. Cord-impressions on the margin of the lip.
2. K. 11998: 41. Large jar with angular lip. Ware coarse and grey. Incrustations. Cord-impressions. 1/3.
3. K. 11998: 121. Belly fragment of a jar or vase. Ware coarse, surfaces dark grey, core pale brick-red. Incrustations. Cord-impressions. 1/3.
4. K. 11998: 100. Belly fragment of a jar. Ware coarse and brick-red. Cord-impressions. Flat relief bands.
5. K. 11998: 26. Rim fragment of a large jar. Ware coarse and light brownish. Dark spots. Incrustations. Cord-impressions crossed by flat horizontal relief bands.
6. K. 11998: 43. Rim fragment of a jar. Ware coarse, surfaces light brownish grey, core brick-red. Dark spots. Incrustations. Cord-impressions and flat relief bands.
7. K. 11998: 39. Base fragment of a large jar. Ware coarse, outside dark grey, inside pale brick-red, core greyish. Dark spots. Cord-impressions and several horizontal relief bands.
8. K. 11999: 11. Rim fragment of a bowl with portion of slightly rounded bottom. At one point the rim is drawn out into a small, flat, horizontal lip which has served as a handle. Ware poorly levigated, tempered with different kinds of grains, soft, and reddish brown. Dark and light spots on outside. Cord-impressions. Height approx. 60 mm. Mouth diameter 120 mm. Thickness about 7 mm, thinning towards the rim.
9. K. 11998: 106. Cylindrical miniature container. An irregular hole through the bottom. Wall thickens towards the base. Ware richly tempered with grains of different kinds, and pale brown in colour. Side and bottom of outside covered with cord-impressions. Height 46 mm. Diameter 34 mm. Thickness at mouth 4 mm.
10. K. 11998: 22. Fragment of a small, wide-mouthed jar which has probably been almost cylindrical. Smooth, everted rim; below this, a row of oblique dents with transverse scores. Horizontal cord-impressions on preserved portion of belly. Ware fairly fine with a small amount of grains as tempering material, and greyish brown. Length of fragment (= height of vessel?) 80 mm. Thickness: at dents 10 mm, near missing bottom 7 mm.
11. K. 11998: 98. Fragment of hollow base of a vessel, or foot of a tripod-vessel? Flat under-side. Wall slightly concave near bottom, then moderately curved outwards towards the break 35 mm above. Ware brick-red, moderately tempered with large white grains. Cord-impressions on outside.

PLATE 51.

1. K. 11998: 89. Rim fragment of a jar with angular lip. Ware coarse and brick-red. Dark spots. Cord-impressions crossed by relief bands.
2. K. 11998: 144. Rim fragment of a large jar with curved lip. Ware coarse, surfaces pale brown, core greyish. Incrustations. Cord-impressions. 1/3.
3. K. 11998: 122. Rim fragment of a large jar with curved lip. Ware coarse and grey. Dark spots. Cord-impressions. 1/3.
4. K. 11998: 2. Rim fragment of a jar with thick lip. Ware coarse and grey. Dark spots and incrustations. Cord-impressions.
5. K. 11998: 14. Rim fragment of a large jar with curved lip. Ware coarse, outside light brown, inside and core grey. Dark spots. Cord-impressions.
6. K. 11998: 20. Rim fragment of a large jar with angular lip. Ware coarse and grey. Dark spots and incrustations. Cord-impressions. 1/3.
7. K. 11998: 40. Rim fragment of a jar of exceptional type, strongly bulging and curved-in towards the mouth. Thickened margin with a furrow around on outside. Ware coarse, hard, grey. Horizontal relief band, one part raised and deeply dentated (for use as a lug-handle?). Cord-impressions.
8. K. 11998: 51. Base fragment of a jar. Ware coarse and light grey. Dark spots. Cord-impressions, also on under-side. Bottom diameter 132 mm.
9. K. 11998: 11. Rim fragment of a small jar. Ware coarse, surfaces grey, core brownish. Incrustations. A horizontal lug-handle.
10. K. 11998: 102. Rim fragment of a small jar with curved lip. Ware coarse and dark grey.
11. K. 11998: 50. Rim fragment of a small jar with curved lip. Vertical ring-handle. Ware coarse and dark grey. Light spots.
12. K. 11998: 47. Rim fragment of a small jar with curved lip. Ware coarse and dark grey.
13. K. 11998: 7. Small rim fragment of a jar, unusually large. Thick, profiled lip. Belly seems to have been very slightly bulging, almost straight at the rim. Ware coarse, surfaces dark grey, core light grey. Cord-impressions (?).

PLATE 52.

1. K. 2120: 3. Small axe of dark grey, fairly hard rock. Rectangular cross-section. Well polished. Thickness 19 mm. 1/1. Site 8.
2. K. 1436. Small adze of dark grey rock. Nearly oval cross-section. Well polished. Thickness about 17 mm. 1/1. Site 35 (bought).
3. K. 2119: 13. Small adze of dark grey rock. Rectangular cross-section. Well polished. Thickness 10 mm. 1/1. Site 8.
4. K. 1524. Small adze of grey rock. Rectangular cross-section. Thickness about 15 mm. 1/1. Site 14.
5. K. 1378. Chisel of dark grey rock, broken-off at the lower part. Rectangular cross-section. Thickness 13 mm. 1/1. Site 33.
6. K. 2053: 14. Chisel with adze-edge. Dark grey rock. Rectangular cross-section. Length 120 mm. Breadth 24 mm. Thickness 15 mm. Site 8.
7. K. 2120: 16. Small chisel with adze-edge. Dark grey rock. Well polished. Rectangular, except rear end which is slightly tapering. Breadth 18 mm. 1/1. Site 8.
8. K. 1461. Chisel with axe-edge. Grey rock. Rectangular cross-section, with slightly rounded sides. Thickness 15 mm. 1/2. Site 11.
9. K. 11111. Rectangular knife of dark grey, fairly hard rock. Edge ground from both sides. Thickness 4 mm. Length 97 mm. Site 14.
10. K. 3226. Rectangular knife with lateral notches. Chipped-off flake of grey rock. Thickness about 6 mm. Length 77 mm. Site 36.

11. K. 1330. Grindstone(?) consisting of a rounded pebble of grey rock with a shallow groove across one side. Thickness about 20 mm. 1/2. Site 33.
12. K. 2255: 74. Round, thick disc of grey rock, with roughly chipped edge. Possibly implement for scraping or polishing purposes. Well smoothed on both sides. Thickness 16 mm. 1/1. Site 30.

PLATE 53.

1. K. 2170: 28. Bone awl with partly worked trochlea. 1/1. Site 14.
2. K. 3187: 121. Fragmentary bone awl, well polished. 1/1. Site 47.
3. K. 3187: 123. Fragment of a bone awl. 1/1. Site 47.
4. K. 2255: 38. Bone implement consisting of a flattened piece, pointed at both ends. 1/1. Site 30.
5. K. 2255: 18. Bone implement, slightly rounded in cross-section. 1/1. Site 30.
6. K. 2255: 22. Bone awl with widened, flat top. 1/1. Site 30.
7. K. 11195. Short bone arrow-head. Triangular cross-section. 1/1. Site 30.
8. K. 11205. Long bone arrow-head. Triangular cross-section. 1/1. Site 30.
9. K. 2255: 32. Bone sewing-needle. 1/1. Site 30.
10. K. 2255: 7. Bone sewing-needle. 1/1. Site 30.
11. K. 3008: 3. Fragment of a grey clay ring. 1/1. Site 45.
12. K. 3008: 17. Fragment of a greyish brown clay ring. 1/1. Site 45.
13. K. 3187: 14. Fragment of a grey clay ring, planed-off on both sides. 1/1. Site 47.
14. K. 2170: 36. Fragment of a grey clay ring. 1/1. Site 14.

PLATE 54.

1. K. 5527, outside. Fragmentary bowl. Ware fine and pale brown. Decorated on both sides. 1/3. Site 31 (bought).
2. K. 5199, outside. Basin. Ware fine and pale brown. Dark spots. Decorated on both sides and lip. Height 95 mm. Mouth diameter 260 mm. Bottom diameter 90 mm. Lip breadth 18 mm. 1/4. Lanchou, 18 (bought).
3. K. 5775, inside. Fragmentary scoop with simple margin and a handle in the shape of a human(?) head. Ware fine, surfaces straw-coloured, core greyish. Small holes through centre of bowl. Decorated on both sides (for outside, see Researches, Pl. 182: 2 b). Height 50 mm (excluding the handle). Mouth diameter 146 mm. Bottom diameter 70 mm. 1/3. Site 40 (bought).
4. K. 5264. Small vase with high neck. Ware fine and straw-coloured. Decorated on lip and outside. Height 128 mm. Neck height 50 mm. Mouth diameter 55 mm. Bottom diameter 54 mm. Lanchou, 18 (bought).
5. K. 5463. Vase with high neck and curved lip. (Sent back to Peking in 1931. Cf. Researches, p. 240, Pl. 184: 3). 1/4. Lanchou, 18 (bought).
6. K. 5276. Vase with high neck. Ware fine and straw-coloured. Decorated on lip and outside. Height 220 mm. Neck height 53 mm. Mouth diameter 97 mm. Bottom diameter 100 mm. Lanchou, 18 (bought).
7. K. 2055: 47. Large fragment of a vase with a vertical ring-handle. Painted décor. Site 8.
8. K. 5622, outside. Basin. Ware fine and straw-coloured. Dark spots. Decorated on both sides and lip. Height 105 mm. Mouth diameter 230 mm. Bottom diameter 110 mm. Lip breadth 14 mm. 1/4. Site 12 (bought).
9. K. 5198, outside. Basin. Ware fine and straw-coloured. Dark spots. Decorated on both sides and lip. Height 74 mm. Mouth diameter 226 mm. Bottom diameter 92 mm. Lip breadth 16 mm. 1/3. Lanchou, 18 (bought).
10. K. 5481, outside. Basin. Ware fine and straw-coloured. Large dark spots. Decorated on both sides and lip. Height 110 mm. Mouth diameter 246 mm. Bottom diameter 114 mm. Lip breadth 20 mm. 1/4. Lanchou, 18 (bought).

PLATE 55.

1. = Inside of Pl. 54: 1.
2. K. 2429: 228. Belly fragment of a vase. Ware fine and straw-coloured. Incrustations. Decorated in a dark colour. Site 19.
3. K. 6738: 27. Belly fragment of a vase. Ware fine and pale straw-coloured. Incrustations. Decorated in a dark colour. Site 25.
4. K. 3240: 3. Belly fragment of a vase. Ware fine and straw-coloured. Incrustations. Decorated in a dark colour. Site 19.
5. K. 2056:138, outside. Rim fragment of a basin. Ware fine, surfaces straw-coloured, core greyish. Decorated on both sides and lip. Site 19.
6. K. 12003: 171. Upper part of a jar with lip. Ware fine and pale brown. Dark spots. Painted décor. Site 14.
7. K. 2056: 158, outside. Rim fragment of a basin. Ware fine and pale straw-coloured. Incrustations. Painted décor on both sides and lip. Site 19.
8. K. 2056: 51, outside. Rim fragment of a basin. Ware fine, surfaces pale brick-red, core greyish. Incrustations. Painted décor on both sides and lip. Site 19.
9. K. 2056: 119, outside. Rim fragment of a basin. Ware fine and greyish brown. Incrustations. Painted décor on both sides and lip. Site 19.
10. K. 2429: 213, outside. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Painted décor on both sides and lip. Site 19.
11. K. 2056: 96, outside. Rim fragment of a basin. Ware fine and pale straw-coloured. Painted décor on outside and lip. Site 19.

PLATE 56.

1. K. 3237: 2, outside. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Painted décor on outside and lip. Site 32.
2. K. 2056: 116, outside. Rim fragment of a basin. Ware fine and straw-coloured. Painted décor on both sides and lip. Site 19.
3. K. 12003: 167, outside. Rim fragment of a basin. Ware fine and pale straw-coloured. Painted décor on outside and lip. Site 14.
4. K. 2056: 97, outside. Rim fragment of a basin. Ware fine, surfaces pale reddish brown, core pale brick-red. Painted décor on both sides and lip. Site 19.
5. K. 3244: 6, outside. Rim fragment of a basin. Ware fine and straw-coloured. Painted décor on outside and lip. Site 42.
6. K. 3247: 85. Belly fragment of a vase. Ware fine and straw-coloured. Incrustations. Painted décor. Site 27.
7. K. 2429: 188. Belly fragment of a vase. Ware fine, surfaces straw-coloured, core brick-red. Incrustations. Painted décor. Site 19.
8. K. 3244: 11. Belly fragment of a vase. Ware fine, surfaces straw-coloured, core pale brick-red. Incrustations. Painted décor. Site 42.
9. K. 2429: 266. Belly fragment of a vase. Ware fine and straw-coloured. Incrustations. Painted décor. 1/3. Site 19.
10. K. 3247: 40. Belly fragment of a vase with a vertical ring-handle. Ware fine, outside pale brown, inside greyish brown. Dark spots. Painted décor. Site 27.
11. K. 3247: 41. Belly fragment of a vase with a vertical ring-handle. Ware fine and pale brown. Dark spots. Painted décor. Site 27.
12. K. 3241: 5, lip. Rim fragment of a basin. Ware fine and pale straw-coloured. Painted décor on outside and lip. Site 19.
13. K. 3247: 58, lip. Rim fragment of a basin. Ware fine and greyish. Dark spots. Painted décor on both sides and lip. Site 27.

PLATE 57.

1. K. 2429: 163, outside. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Painted décor on outside and lip. Site 19.
2. K. 2056: 35, outside. Rim fragment of a basin. Ware fine, surfaces pale straw-coloured, core greyish. Painted décor on both sides and lip. Site 19.
3. K. 5216, outside. Bowl. Ware fine and pale brown. Dark spots. Painted décor on outside. Height 109 mm. Mouth diameter 190 mm. Bottom diameter 99 mm. 1/3. Site 31 (bought).
4. K. 2056: 151. Belly fragment of a vase. Ware fine and straw-coloured. Painted décor. Site 19.
5. K. 12003: 163, outside. Rim fragment of a basin. Ware fine and pale straw-coloured. Incrustations. Below the margin, a bi-conical hole. Painted décor on both sides and lip. Site 14.
6. K. 3233: 53, lip. Lip fragment of a basin. Ware fine, surfaces straw-coloured, core dark brick-red. Painted décor. Site 32.
7. K. 12003: 222, inside. Rim fragment of a bowl. Painted décor. Site 14.
8. K. 3244: 7. Neck fragment of a vase. Ware fine and pale straw-coloured. Painted décor. Site 42.
9. K. 3234: 2. Neck fragment of a vase. Ware fine, surfaces straw-coloured, core greyish. Incrustations. Painted décor. Site 42.
10. K. 3052: 19. Upper part of a vase. Ware fine, outside straw-coloured, inside and core brick-red. Painted décor. Site 46.
11. K. 3247: 44, lip. Rim fragment of a basin. Ware fine, surfaces pale straw-coloured, core greyish. Painted décor on both sides and lip. Site 27.
12. K. 3244: 9, inside. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Painted décor on inside and lip. Site 42.
13. K. 2425: 29, lip. Lip fragment of a vase neck. Ware fine, surfaces straw-coloured, core brick-red. Incrustations. Painted décor. Site 32.

PLATE 58.

1. K. 12003: 217, outside. Rim fragment of a bowl. Ware fine and pale reddish brown. Dark spots. Painted décor on both sides. Site 14.
2. K. 3247: 13, outside. Rim fragment of a bowl. Ware fine and pale straw-coloured. Painted décor on both sides. Site 27.
3. K. 2056: 113, outside. Rim fragment of a bowl with portion of bottom. Ware fine, surfaces straw-coloured, core pale brick-red. Incrustations. Painted décor on both sides. Site 19.
4. K. 2429: 148, outside. Rim fragment of a bowl. Ware fine and pale straw-coloured. Incrustations. Dark spots. Painted décor on both sides. Site 19.
5. K. 2429: 337, outside. Large fragment of a bowl with portion of bottom. Ware fine and straw-coloured. Incrustations. Painted décor on outside. Height 54 mm. Mouth diameter 128 mm. Bottom diameter 78 mm. Site 19.
6. K. 3247: 1, outside. Rim fragment of a bowl. Ware fine and pale brick-red. Painted décor on both sides. Site 27.
7. K. 3247: 55, lip. Neck fragment of a vase. Ware fine and straw-coloured. Incrustations. Painted décor. Site 27.
8. K. 3247: 37. Neck fragment of a vase. Ware fine, outside pale straw-coloured, inside and core darker. Incrustations. Painted décor. Site 27.
9. K. 3238: 2. Neck fragment of a vase. Ware fine and straw-coloured. Painted décor. Site 32.
10. K. 3242: 5. Upper part of a vase neck. Ware fine, surfaces pale reddish brown, core brick-red. Dark spots. Incrustations. Painted décor. Site 34.
11. K. 3247: 84. Shoulder fragment of a vase. Ware fine and straw-coloured. Painted décor. Site 27.
12. K. 3242: 23, lip. Rim fragment of a basin. Ware fine, surfaces straw-coloured, core greyish. Painted décor on inside and lip. Site 34.

13. K. 3239: 1, lip. Rim fragment of a basin. Ware fine and pale straw-coloured. Painted décor. Site 32.
14. K. 3246: 3, lip. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Painted décor on inside and lip. Site 28.
15. K. 12003: 158, outside. Rim fragment of a basin. Ware fine and straw-coloured. Painted décor on both sides and lip. Site 14.
16. K. 3241: 2, lip. Rim fragment of a basin. Ware fine, surfaces pale straw-coloured, core pale brick-red. Painted décor on lip. Site 19.
17. K. 3239: 3, lip. Rim fragment of a basin. Ware fine and straw-coloured. Painted décor on lip. Site 32.
18. K. 2056: 139, outside. Rim fragment of a basin. Ware fine and brick-red. Painted décor on outside and lip. Site 19.
19. K. 3241: 8, lip. Rim fragment of a basin. Ware fine and pale straw-coloured. Painted décor on lip. Site 19.
20. K. 3247: 48, lip. Rim fragment of a basin. Ware fine, surfaces pale straw-coloured, core brick-red. Painted décor. Site 27.

PLATE 59.

1. K. 12003: 383, inside. Rim fragment of a bowl. Ware fairly fine, tempered with a small amount of fine grains, pale brown in colour. Painted décor. Site 14.
2. K. 3233: 57, lip. Rim fragment of a basin. Ware fine, surfaces pale brown, core reddish. Painted décor on outside and lip. Site 32.
3. K. 3246: 2, lip. Rim fragment of a basin. Ware fine, surfaces pale brown, core brick-red. Dark spots. Painted décor on both sides and lip. Site 28.
4. K. 2429: 345, lip. Rim fragment of a basin. Ware fine, surfaces straw-coloured, core greyish. Incrustations. Painted décor on outside and lip. Site 19.
5. K. 2413: 53, outside. Rim fragment of a basin. Ware fine, surfaces pale straw-coloured, core greyish. Painted décor on both sides and lip. Site 27.
6. K. 3242: 1. Belly fragment of a vase. Ware fine and straw-coloured. Brown spots. Painted décor. Site 34.
7. K. 2056: 45. Neck fragment of a vase. Ware fine, outside grey, inside and core straw-coloured. Painted décor. Site 19.
8. K. 3241: 29. Shoulder fragment of a vase. Ware fine and pale straw-coloured. Incrustations. Painted décor. Site 19.
9. K. 3242: 3. Neck fragment of a vase. Ware fine and greyish brown. Painted décor. Site 34.
10. K. 3244: 10. Fragment of a vase, from neck and shoulder. Ware fine, surfaces straw-coloured, core greyish. Painted décor. Site 42.
11. K. 3242: 12. Shoulder fragment of a vase. Ware fine, surfaces pale straw-coloured, core greyish. Green and dark spots. Painted décor. Site 34.
12. K. 3247: 39. Neck fragment of a vase. Ware fine and greyish brown. Brown spots. Incrustations. Painted décor. Site 27.
13. K. 2429: 219, lip. Rim fragment of a basin. Ware fine and straw-coloured. Incrustations. Painted décor on outside and lip. Site 19.
14. K. 2427: 39, lip. Rim fragment of a basin. Ware fine and pale brown. Painted décor on outside and lip. Site 20.
15. K. 3241: 10, lip. Rim fragment of a basin. Ware fine, outside pale brick-red, inside and core pale brown. Painted décor on outside and lip. Site 19.
16. K. 3233: 55, lip. Rim fragment of a basin. Ware fine, surfaces pale reddish brown, core brick-red. Incrustations. Painted décor on outside and lip. Site 32.

17. K. 2429: 197, lip. Rim fragment of a basin. Ware fine and straw-coloured. Painted décor on both sides and lip. Site 19.
18. K. 12003: 196, outside. Rim fragment of a basin. Ware fine and pale straw-coloured. Dark spots. Painted décor on both sides and lip. Site 14.

PLATE 60.

1. K. 2055: 819, lip. Rim fragment of a fairly small basin. A dentated, horizontal lug-handle. Painted décor. Site 8.
2. K. 3247: 59, lip. Rim fragment of a basin. Ware fine, surfaces straw-coloured, core greyish. Painted décor. Site 27.
3. K. 3239: 2, lip. Rim fragment of a basin. Ware fine, surfaces pale brown, core greyish. Incrustations. Painted décor. Site 32.
4. K. 12003: 103, inside. Rim fragment of a bowl. Ware fine and straw-coloured. Painted décor. Site 14.
5. = Inside of Pl. 54: 9.
6. K. 3240: 1. Belly fragment of a vase. Ware fine, outside pale brown, inside and core reddish brown. Incrustations. Painted décor. Site 19.
7. K. 2056: 110. Belly fragment of a vase. Ware fine and straw-coloured. Painted décor. Site 19.
8. K. 2429: 330. Belly fragment of a vase. Ware fine and straw-coloured. Incrustations. Painted décor. Site 19.
9. K. 12003: 405. Fragment of a vase, from belly and lower part of shoulder. Ware of smooth, painted part is fine, of cord-marked part fairly coarse; pale brown in colour. Painted décor. Site 14.
10. K. 3248: 2, outside. Rim fragment of a large basin. Ware coarse, surfaces pale brick-red, core brick-red. Painted décor on outside. Site 19.
11. K. 11242: 47. Rim fragment of a small jar with curved lip. Ware fairly coarse, and greyish white. Site 33.
12. K. 11242: 726. Upper part of a small jar. Ware fairly coarse, and grey. Cord-impressions. Site 33.

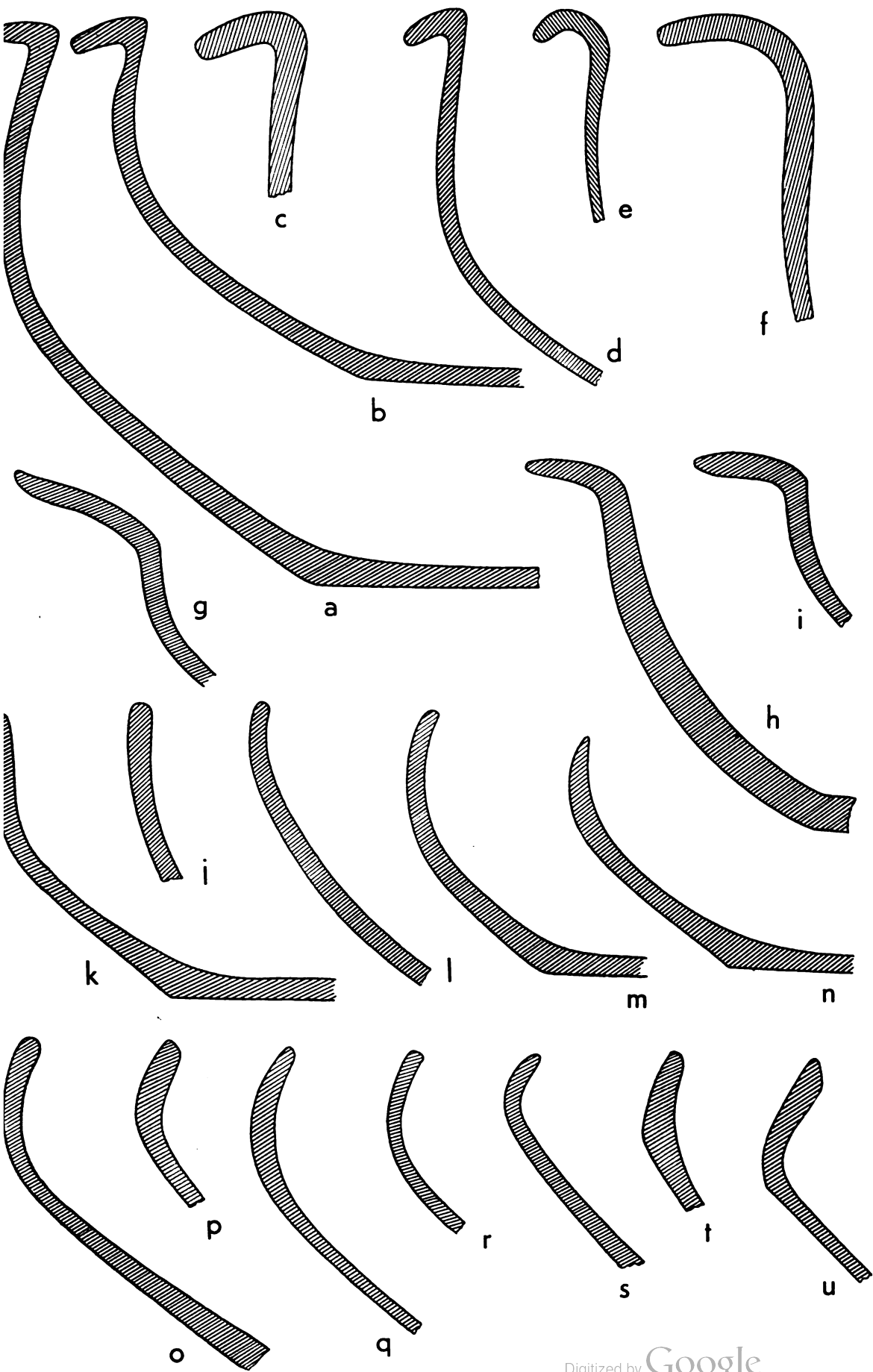


Fig. 1.

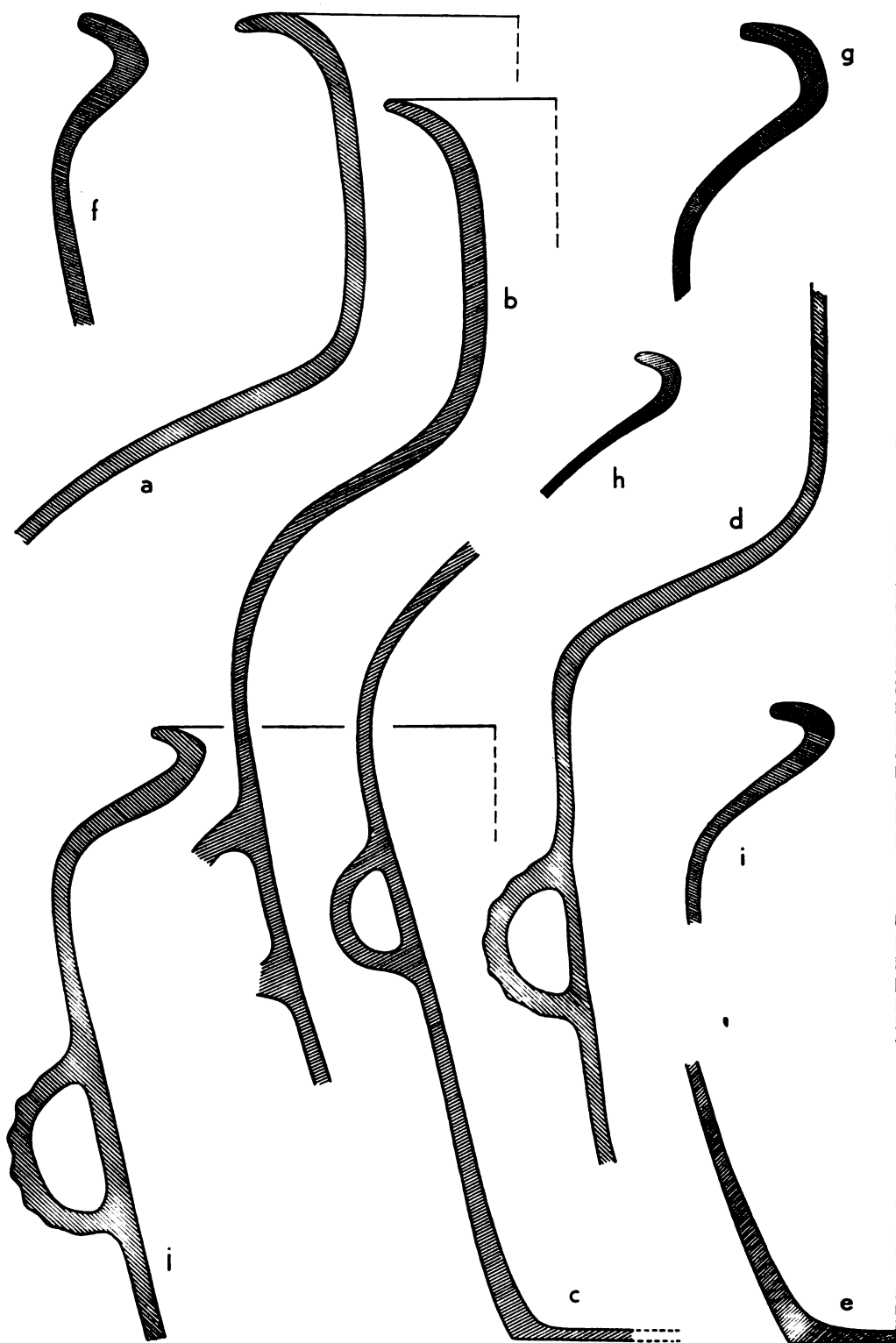


Fig. 2.

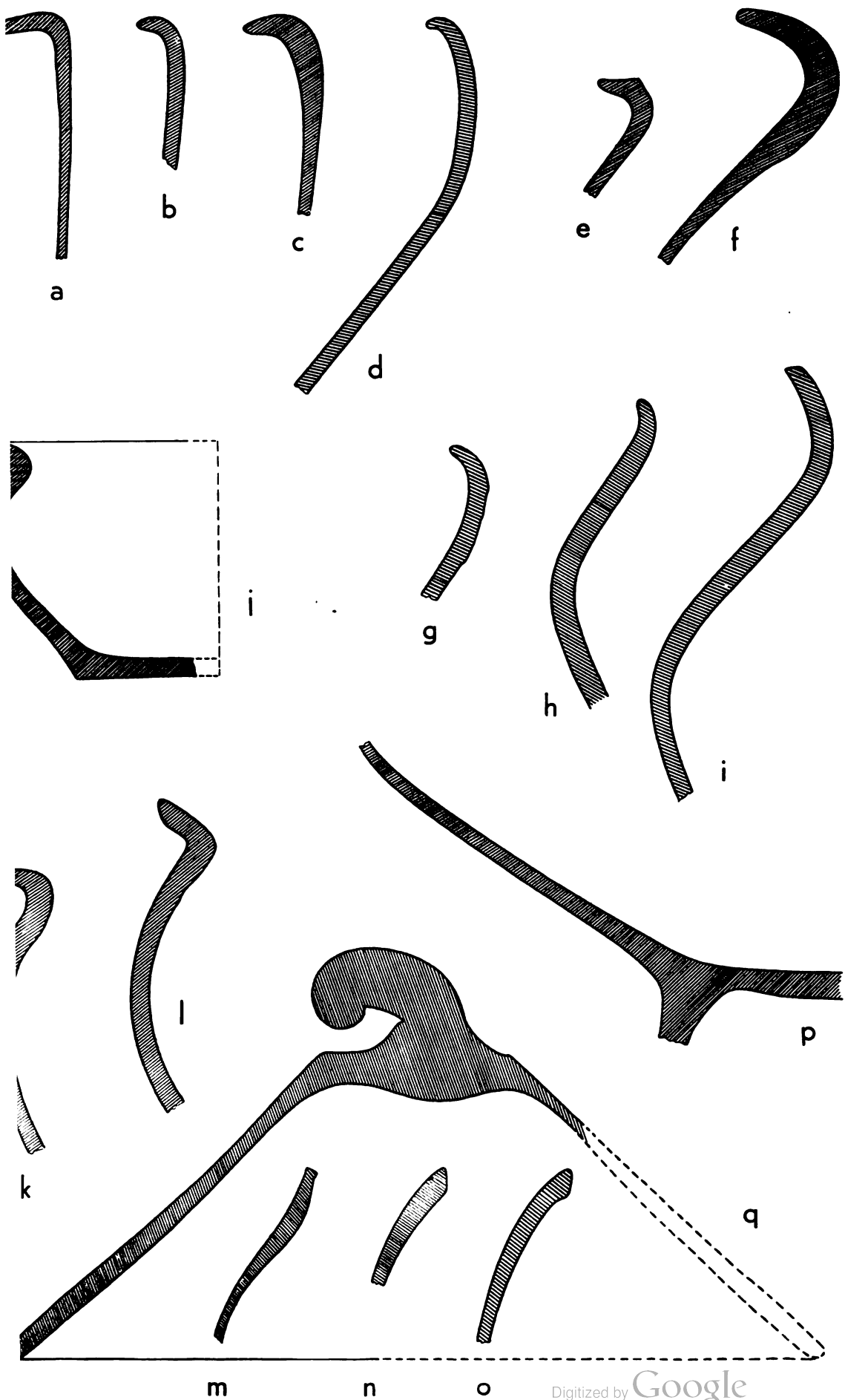
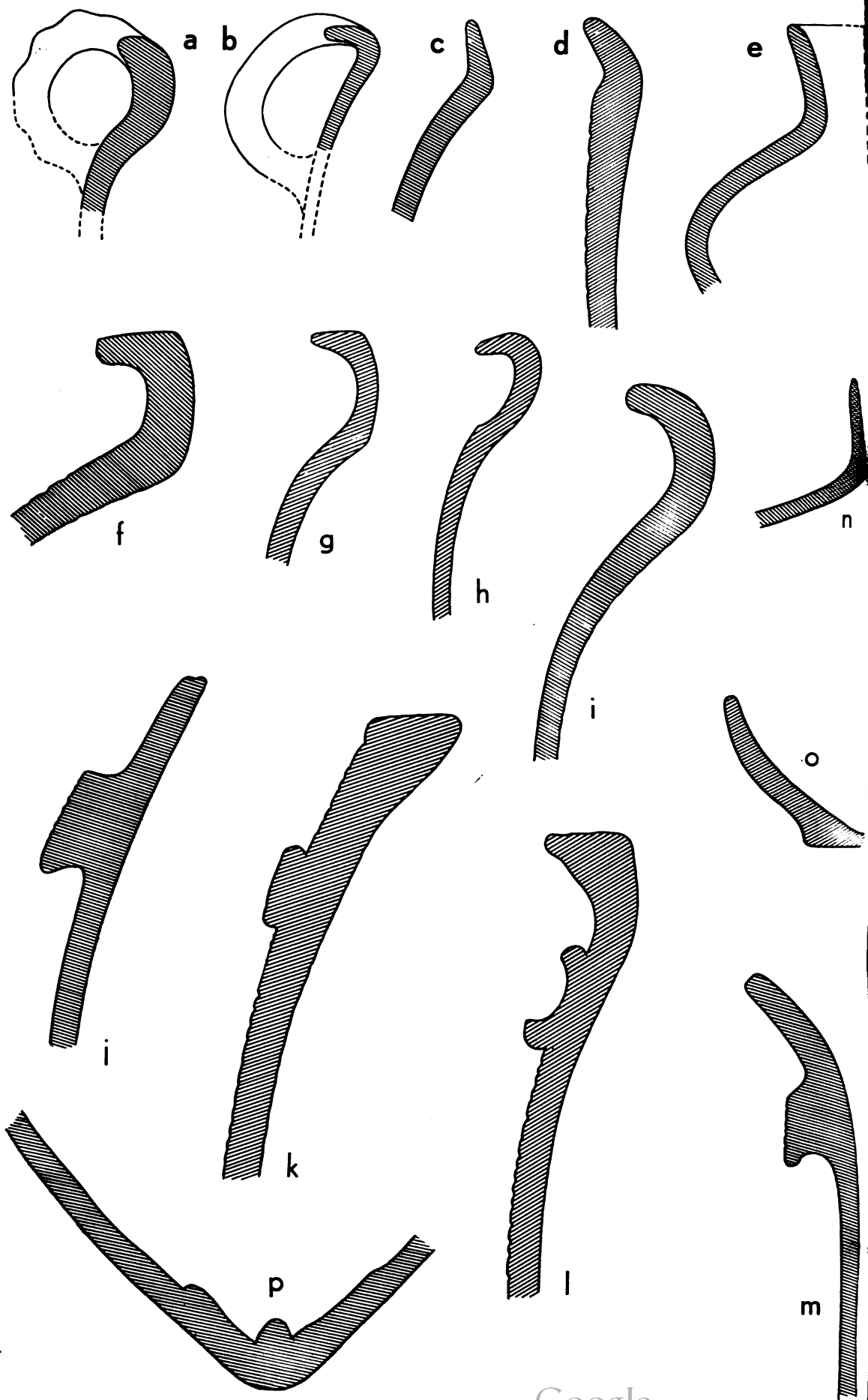
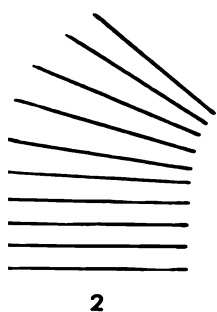
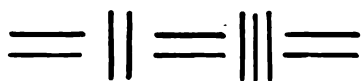


Fig. 3.

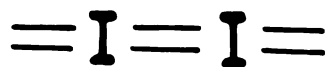




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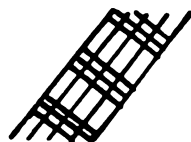
6a



6b



7a



7b



7c



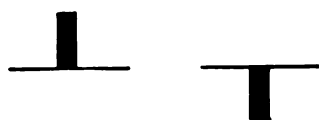
8a



8b



9



10



11a



11b



12 a-c



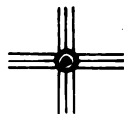
12 d-e



13



14a



14b



15 a-c



15d



16



17



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Fig. 5.



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✓ 24



25



26



27 a, b



28 a



28 b



28 c



29 a



29 b



30 a



30 b



30 c



30 d



31



32



33



34 a



34 b



35



36



37

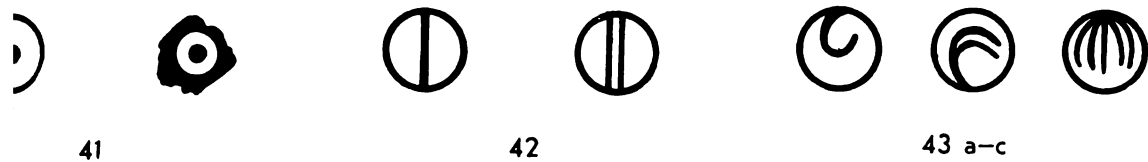


38 a



38 b

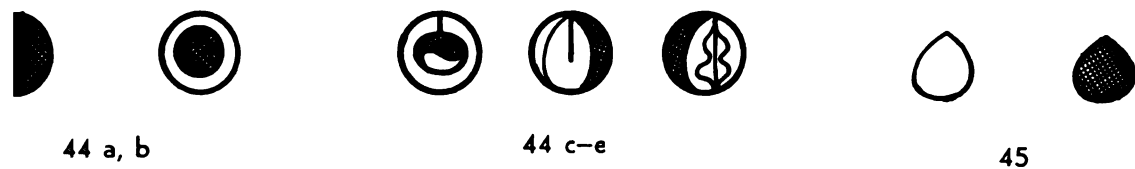
Fig. 6.



41

42

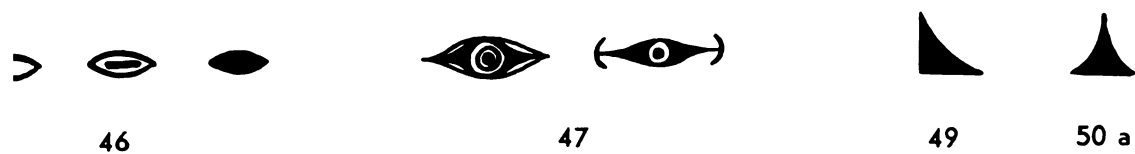
43 a-c



44 a, b

44 c-e

45

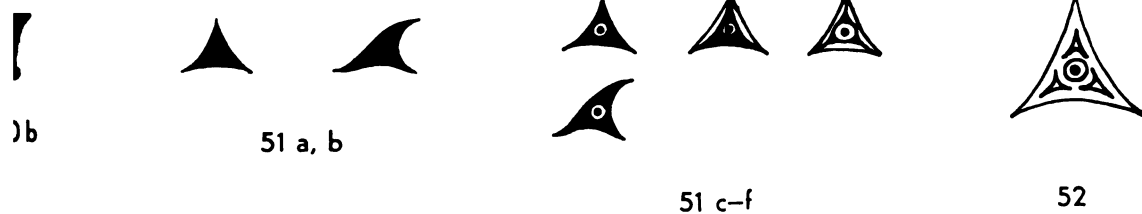


46

47

49

50 a



51 a, b

51 c-f

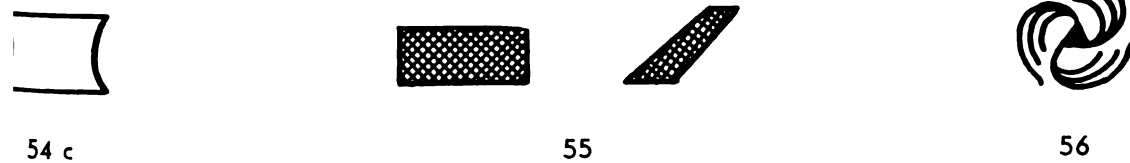
52



53

54 a

54 b



54 c

55

56

Fig. 7.

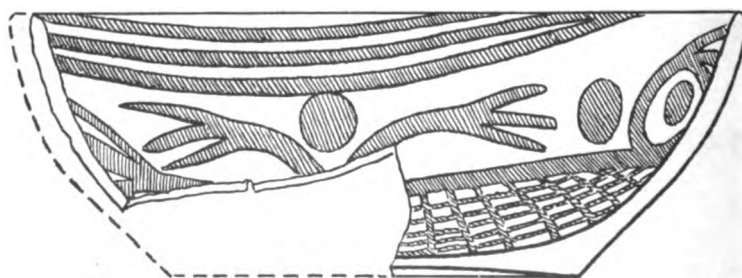
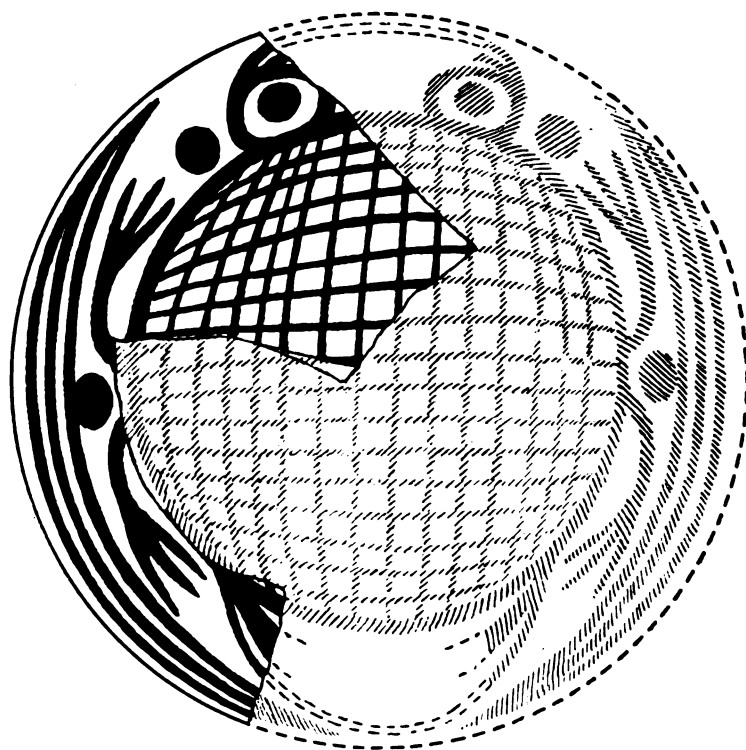


Fig. 8.

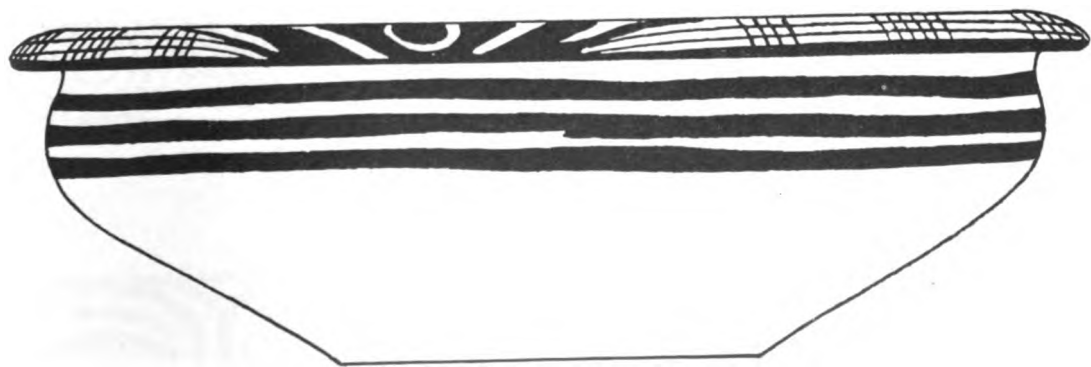
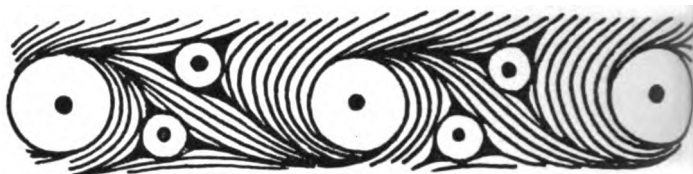


Fig. 9.



A



B



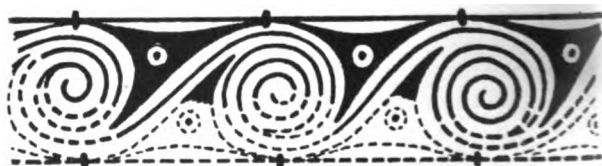
C



D



E



F



G

Fig. 10.



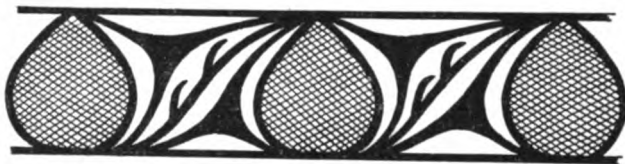
H



I



J



K



L



M



N



O

Fig. 11.



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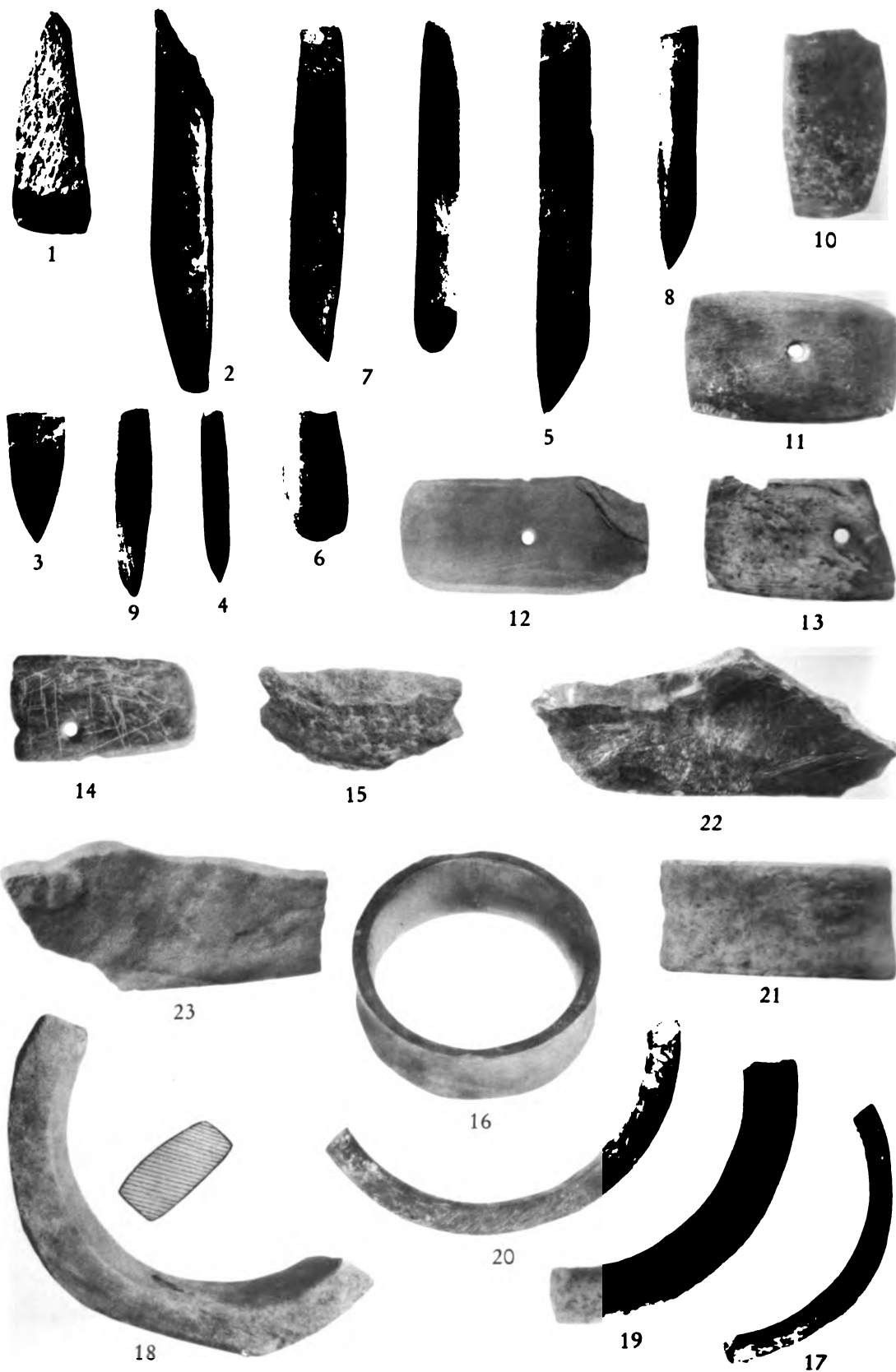
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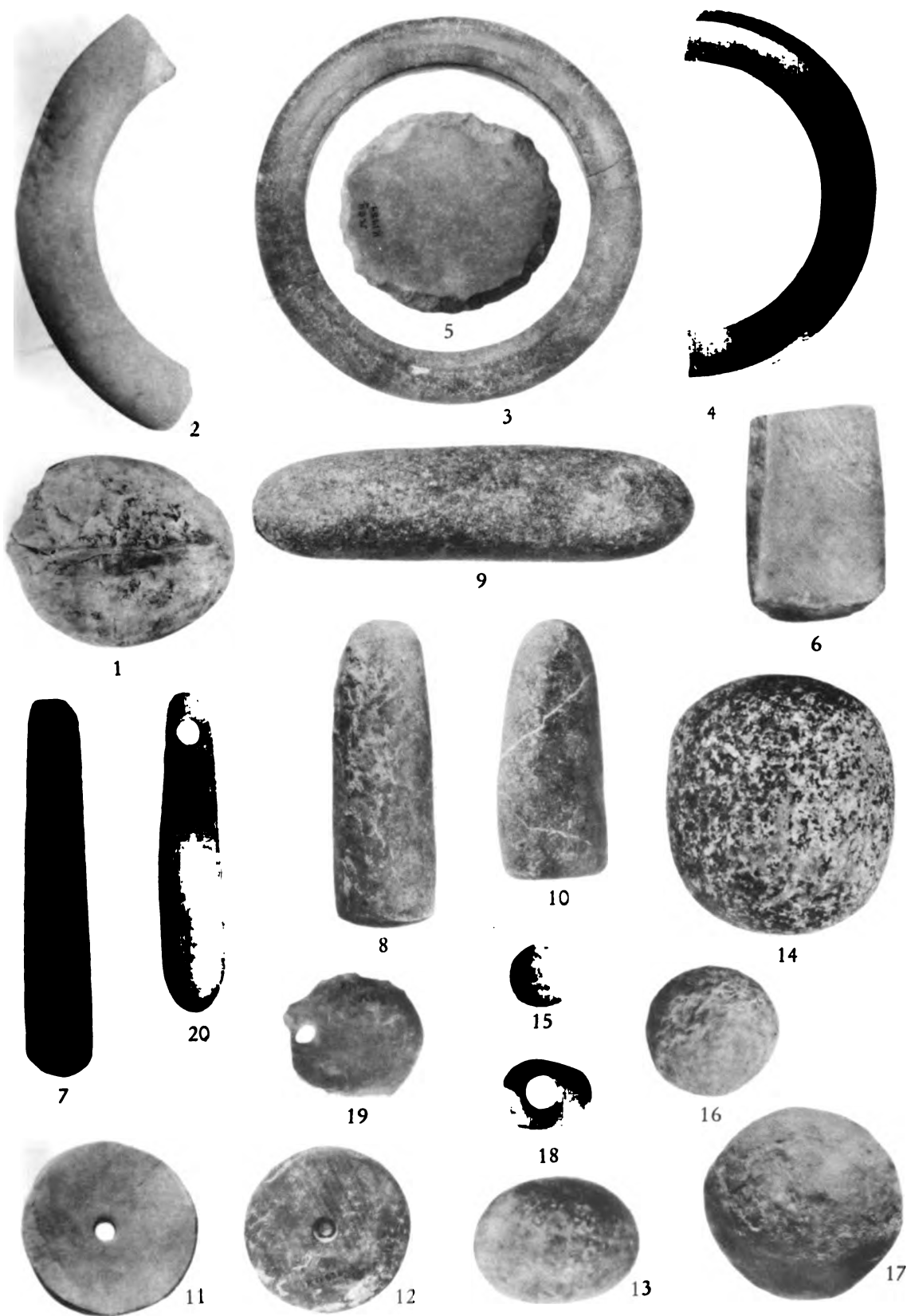


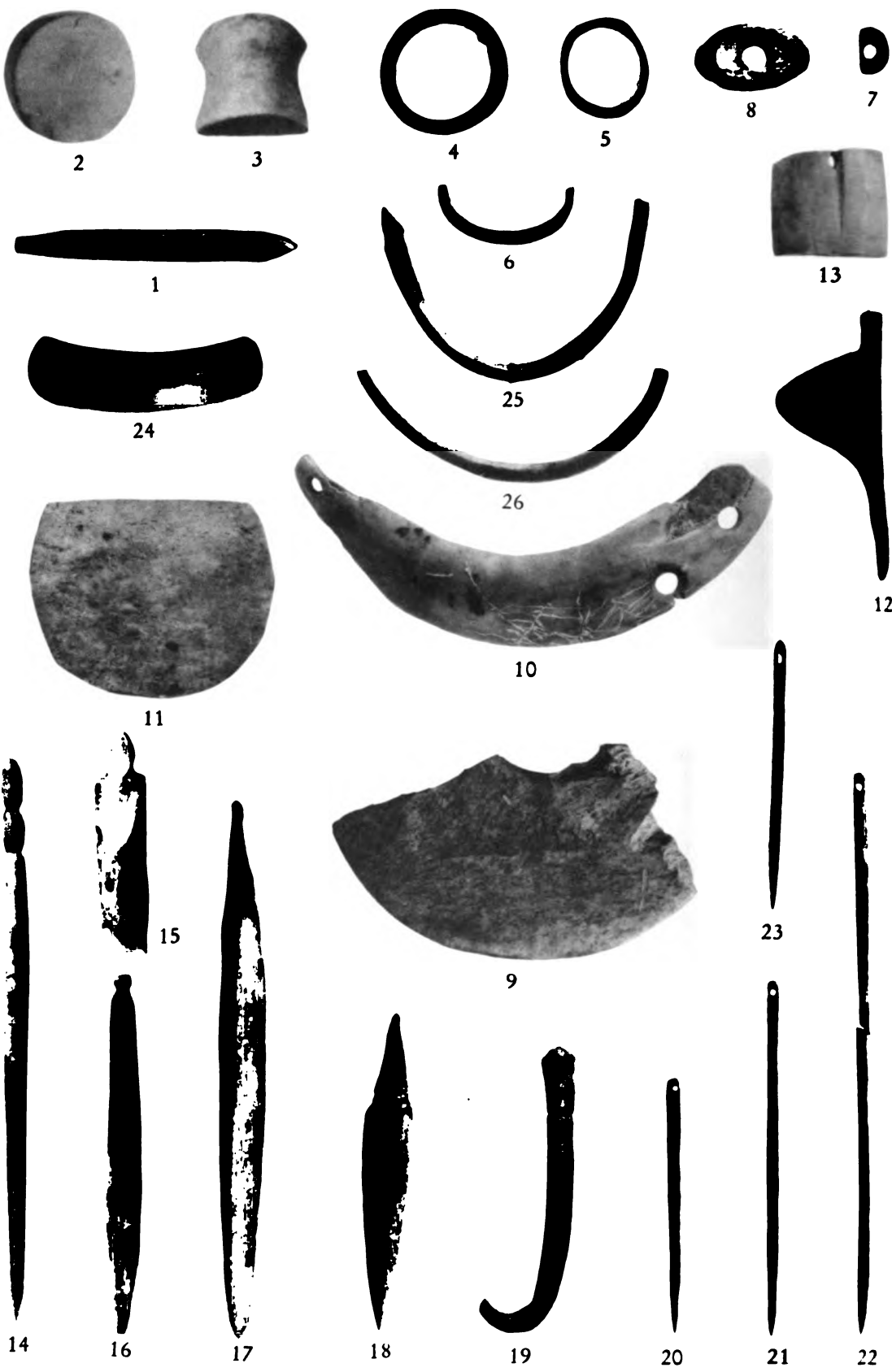
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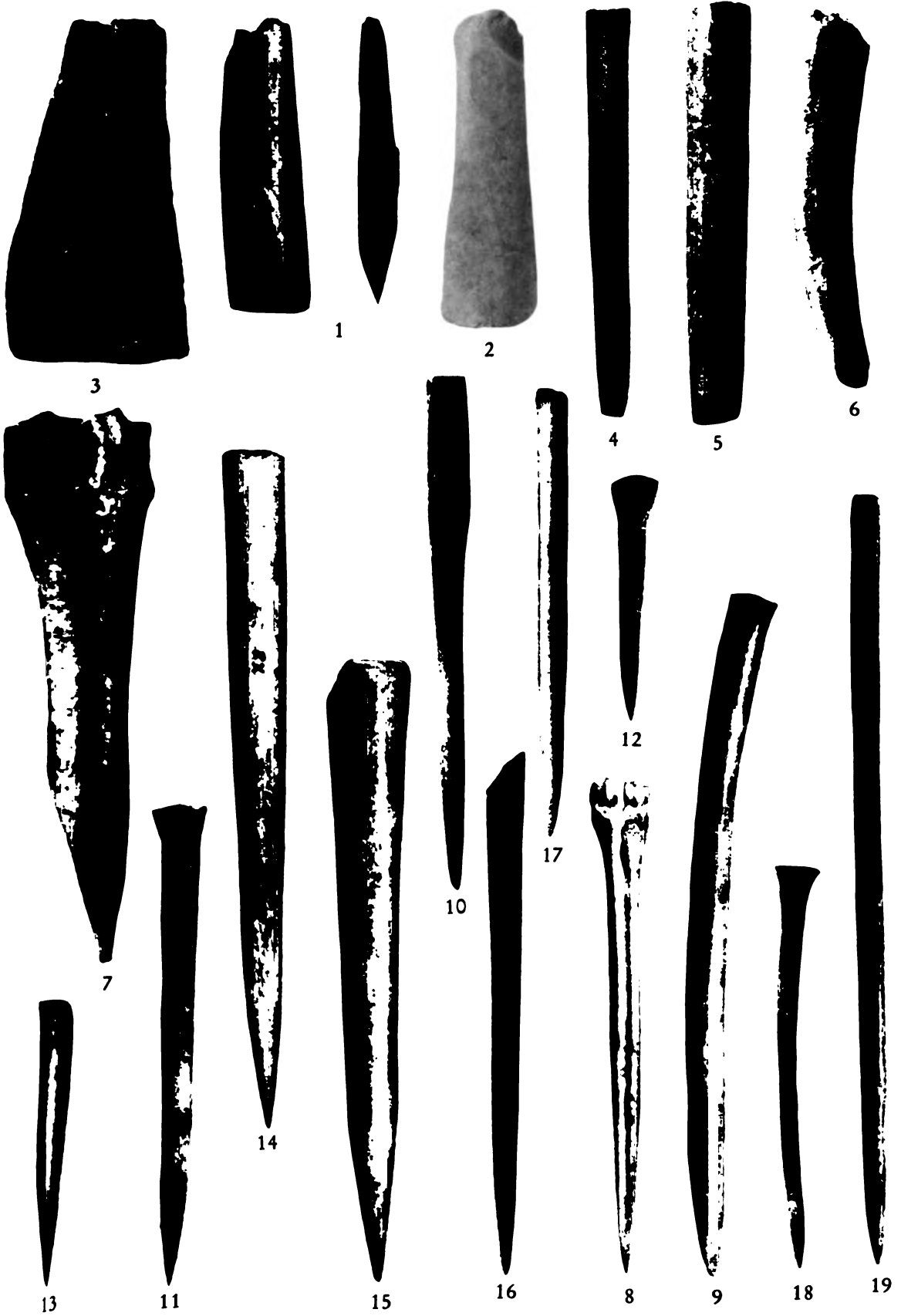


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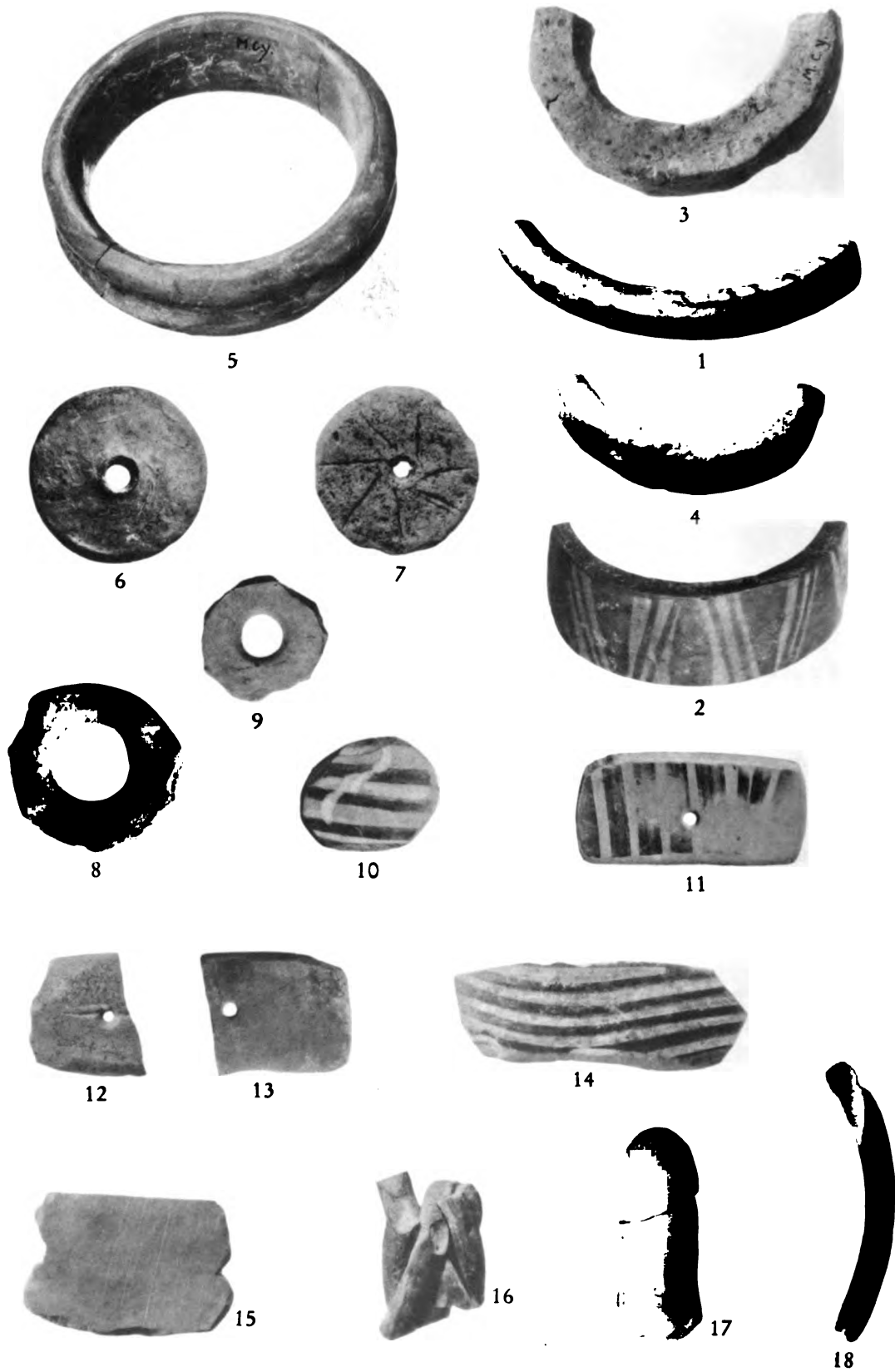














1a



1b



1c



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4b



4a





1



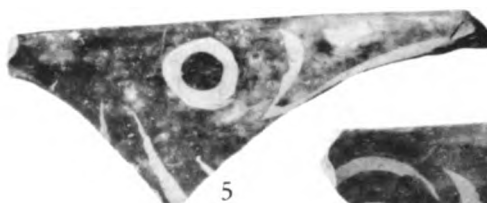
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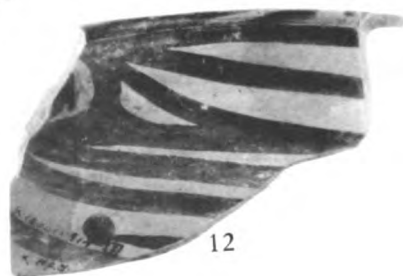
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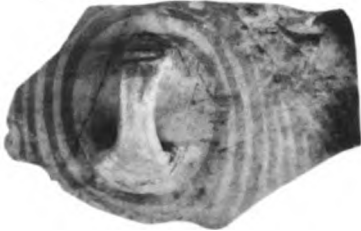
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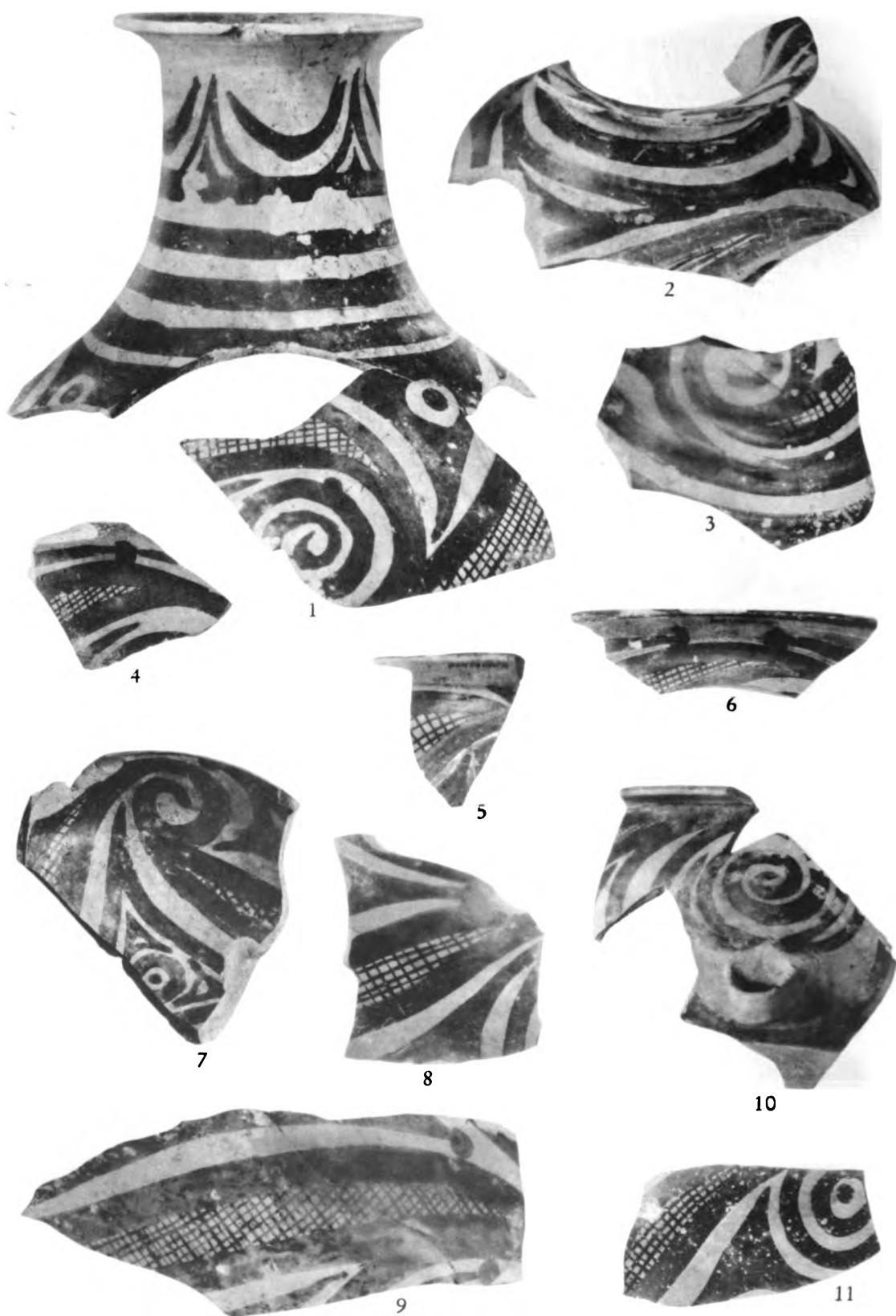
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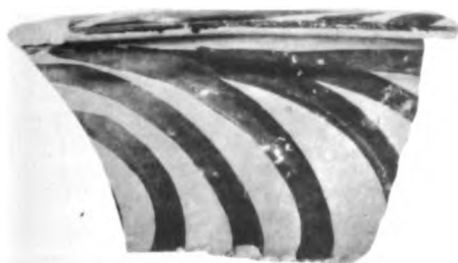
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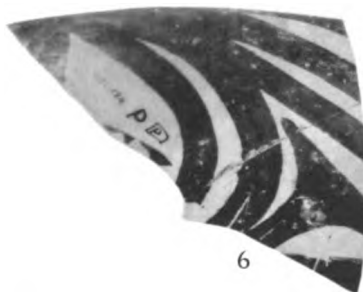
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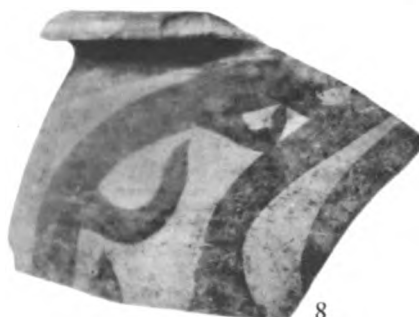
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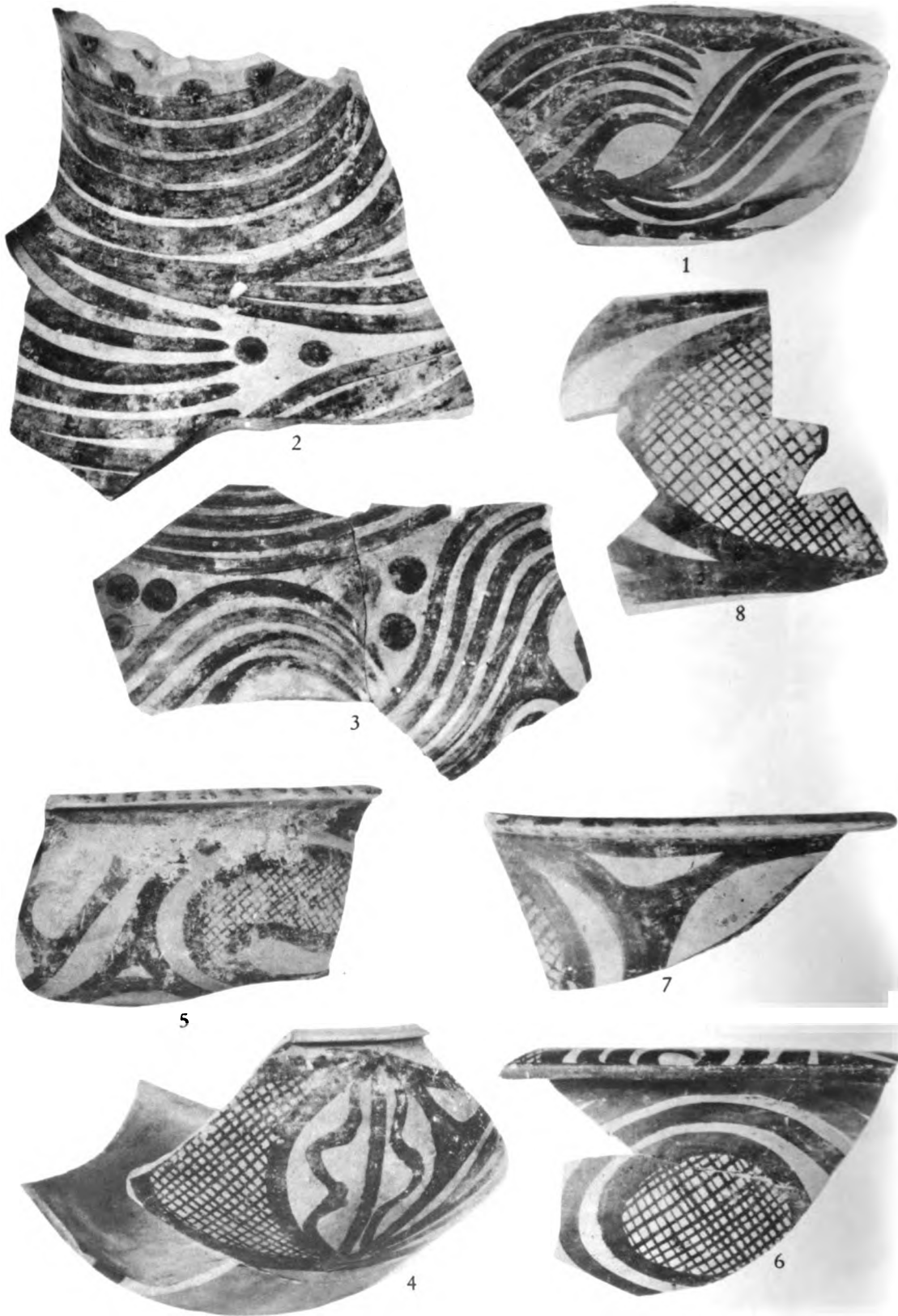
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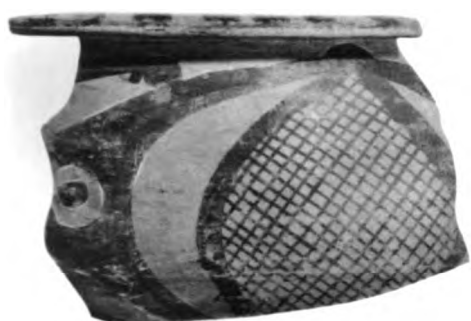


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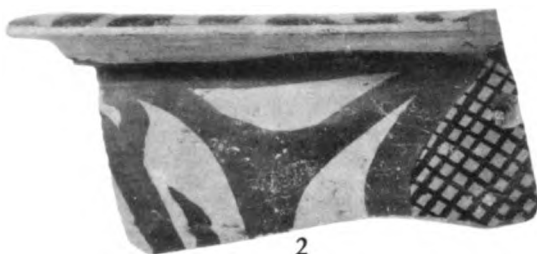


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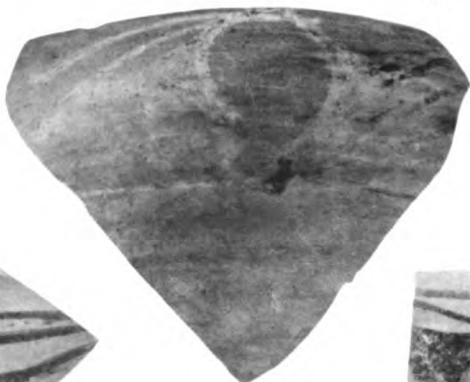
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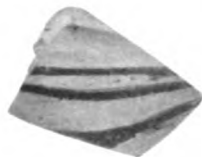
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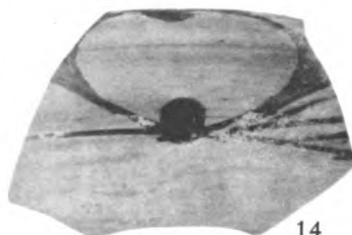
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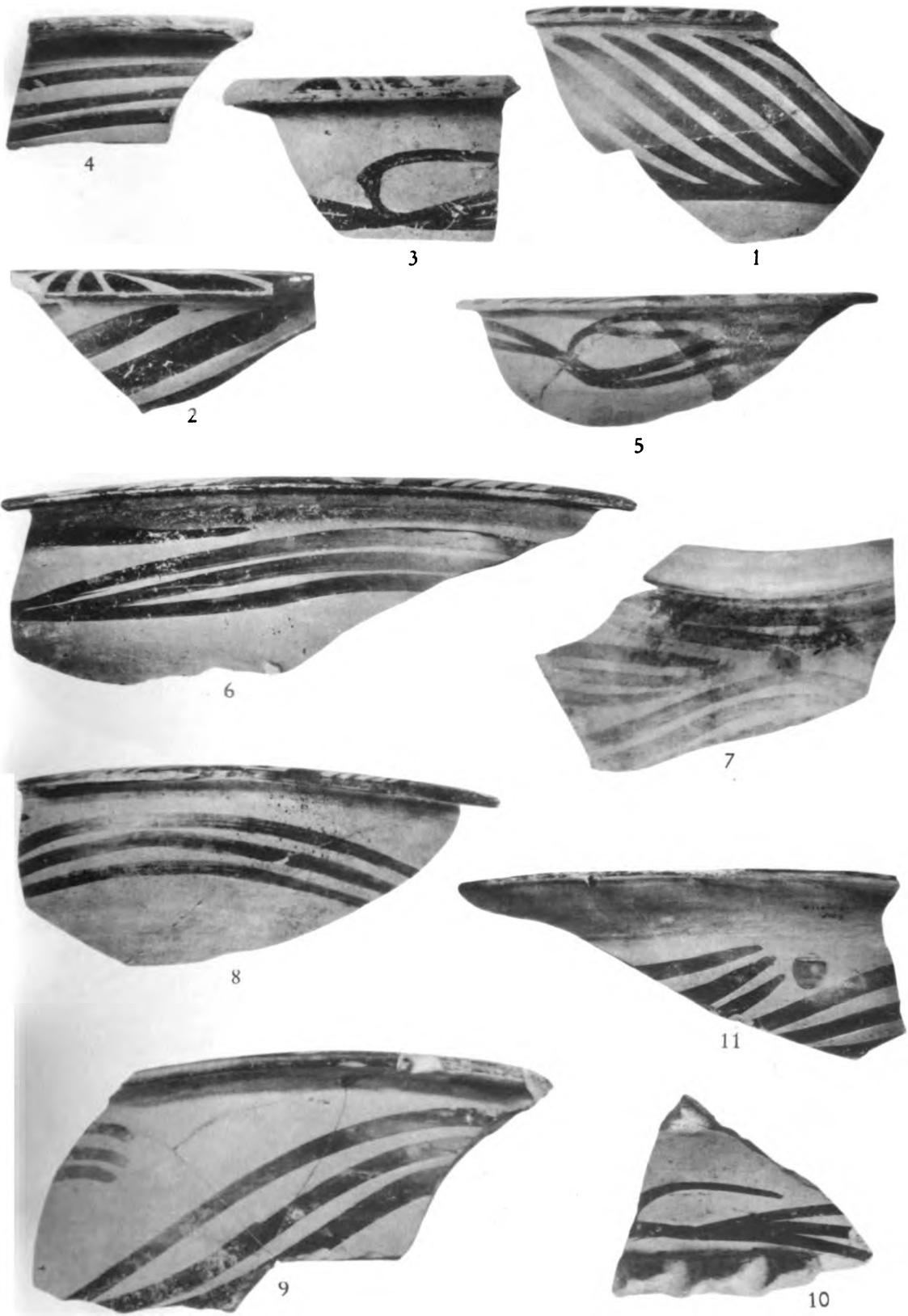


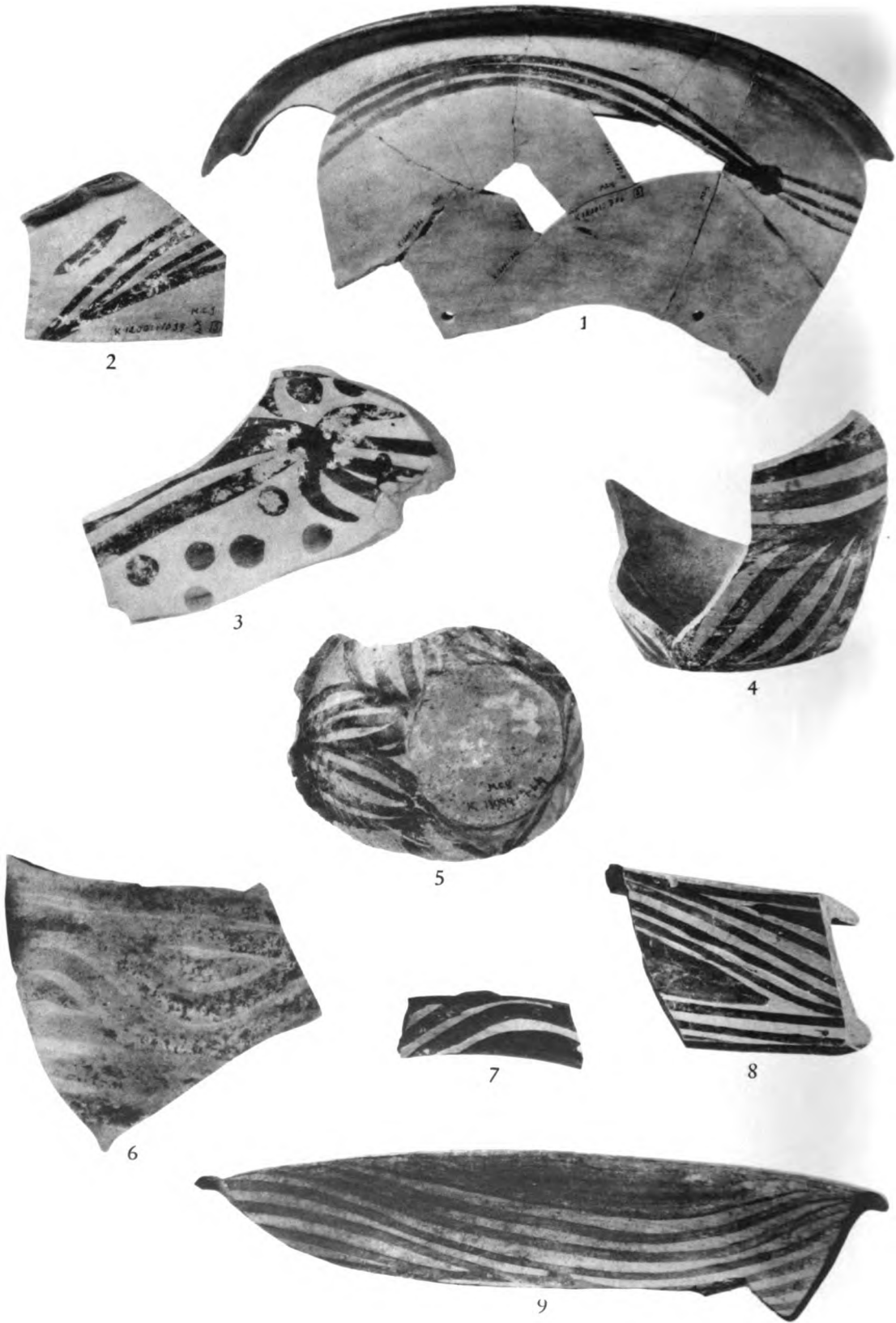
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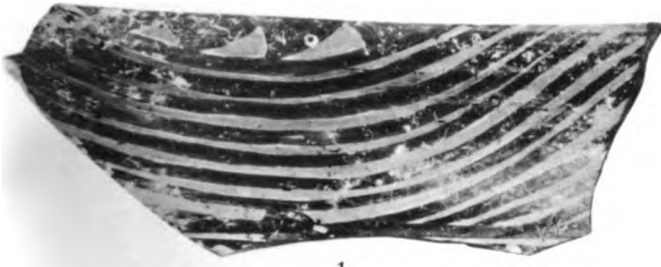


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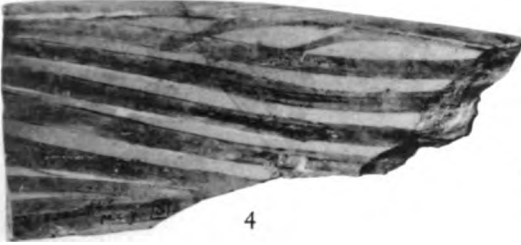
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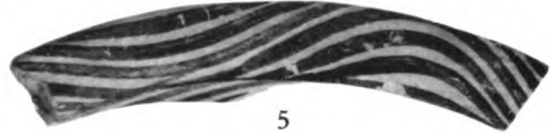
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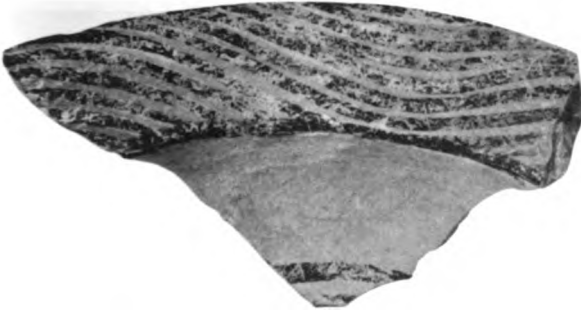
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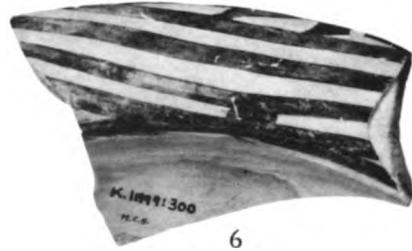
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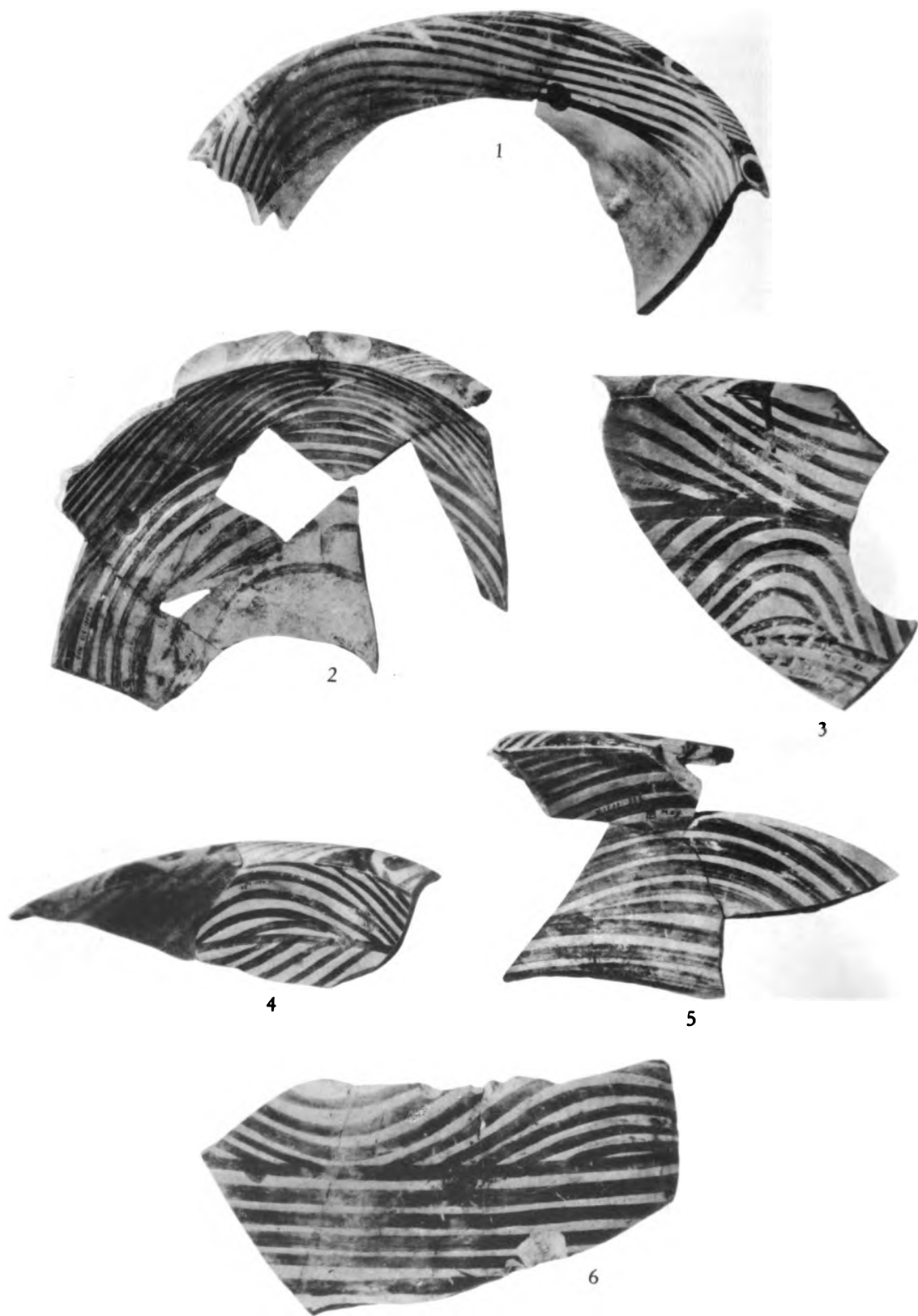
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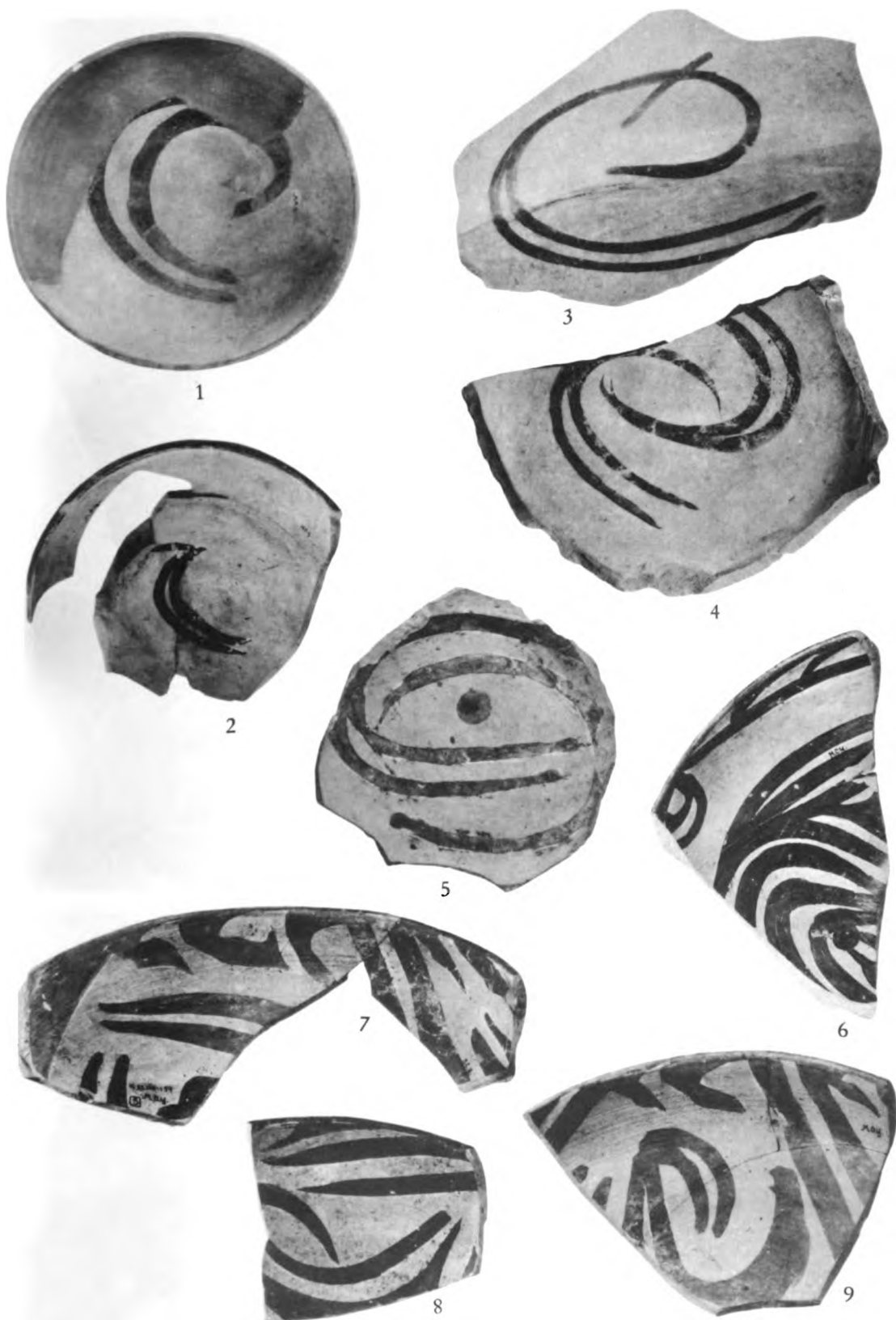


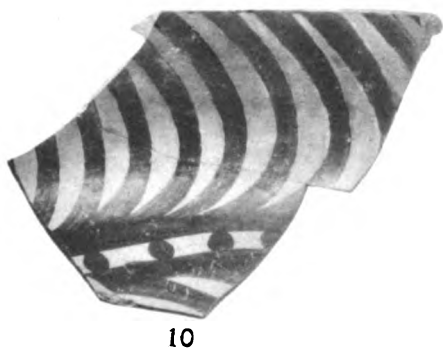
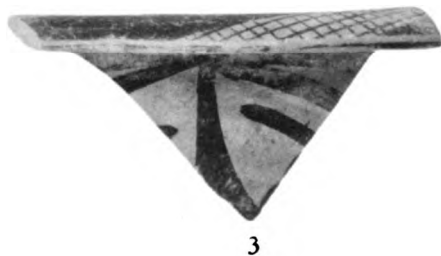
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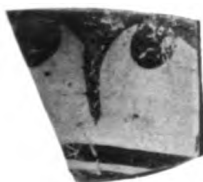
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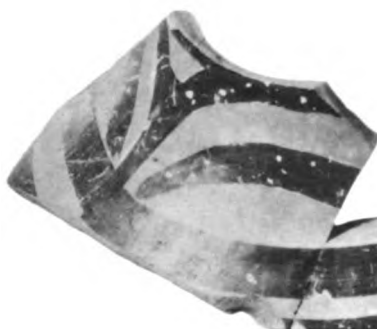
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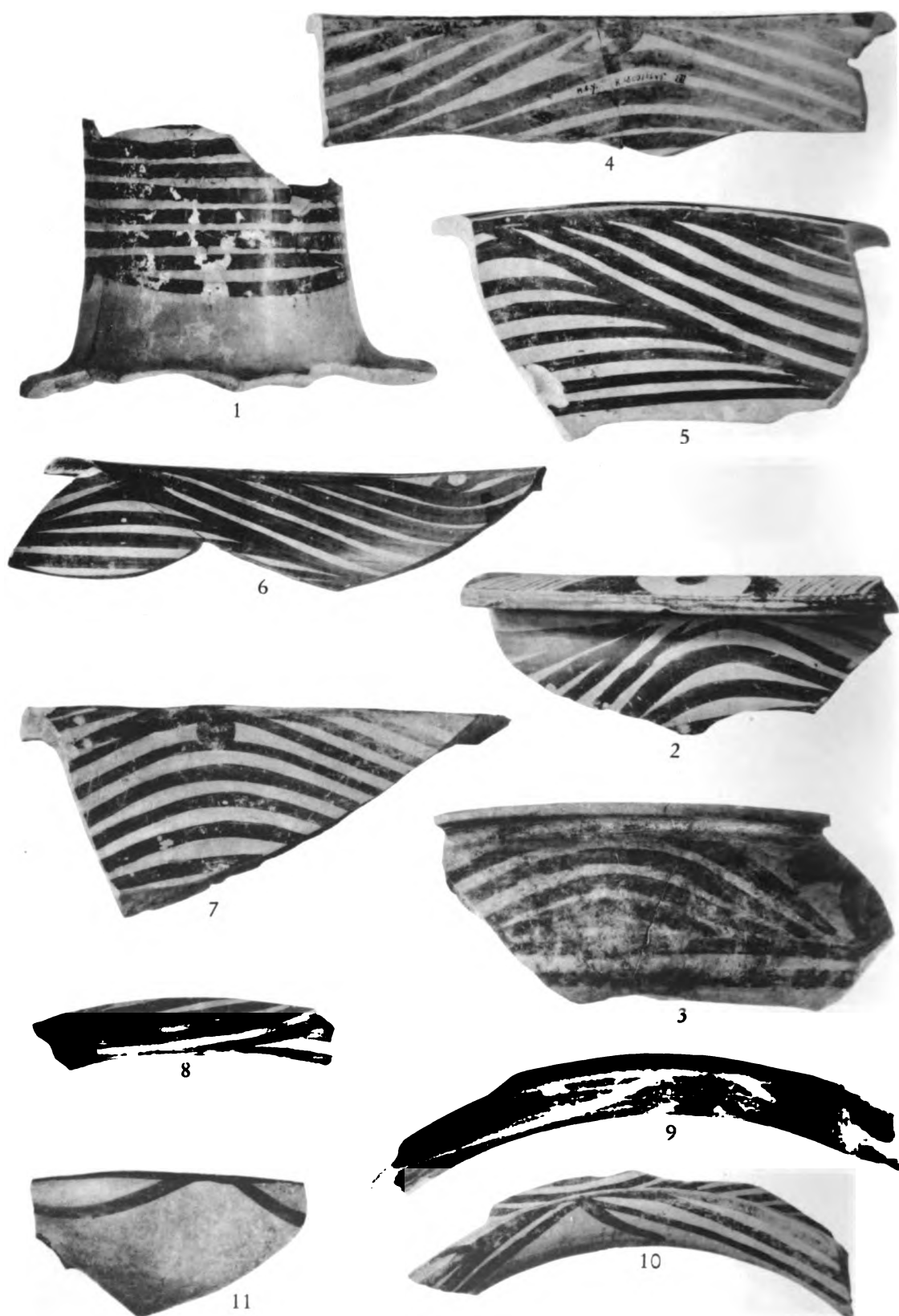
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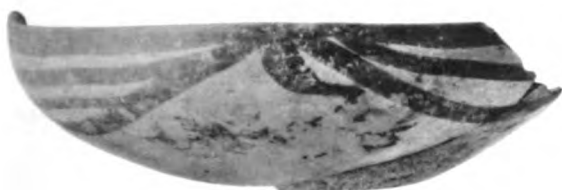
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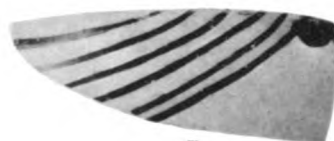
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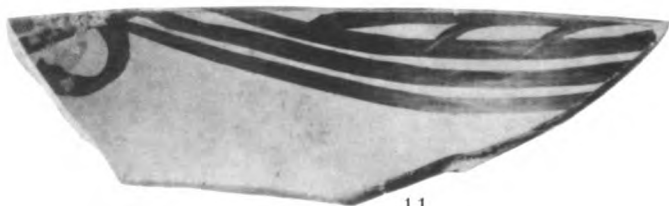
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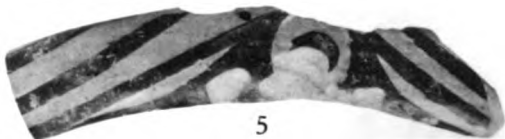
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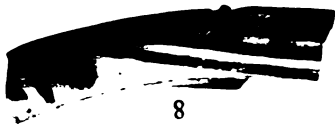
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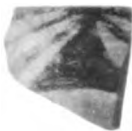
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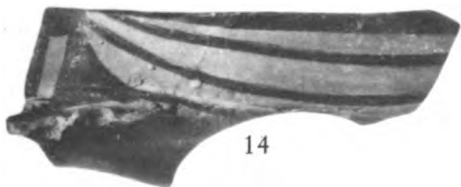
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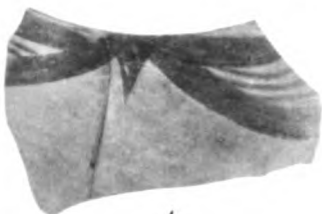
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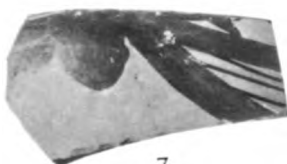
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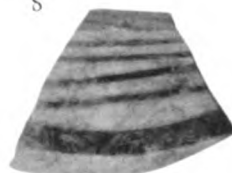
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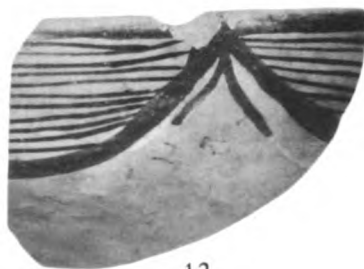
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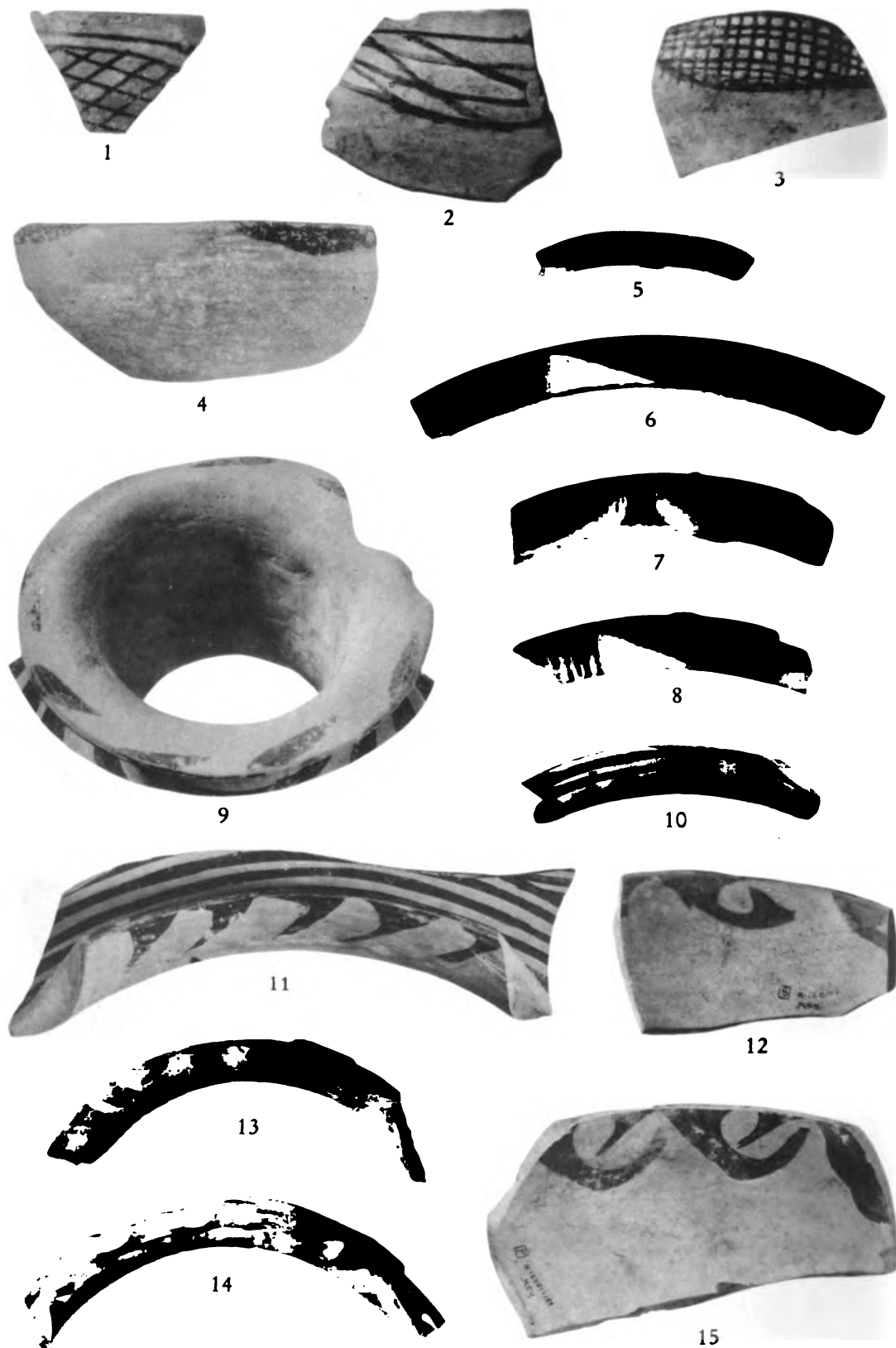
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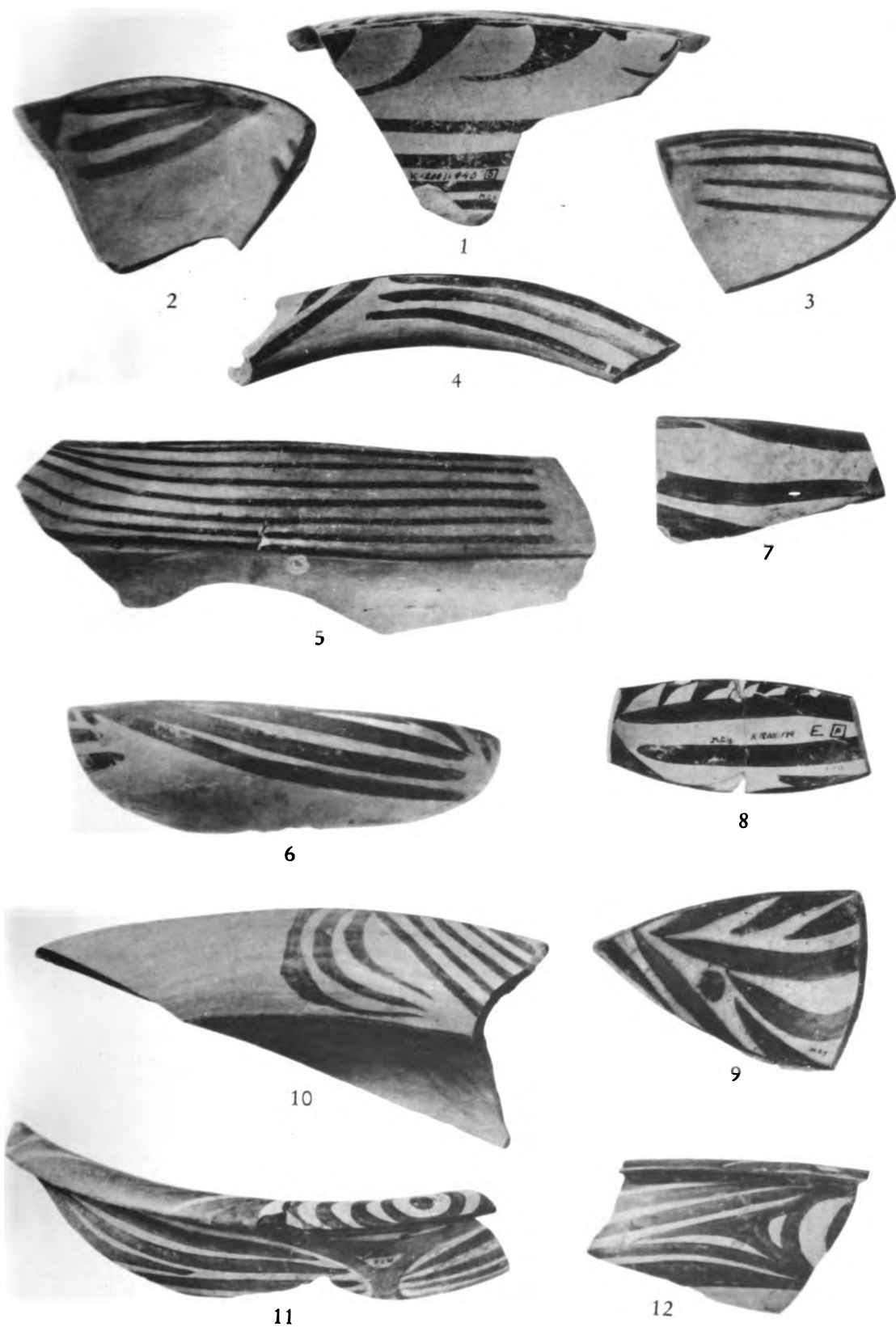


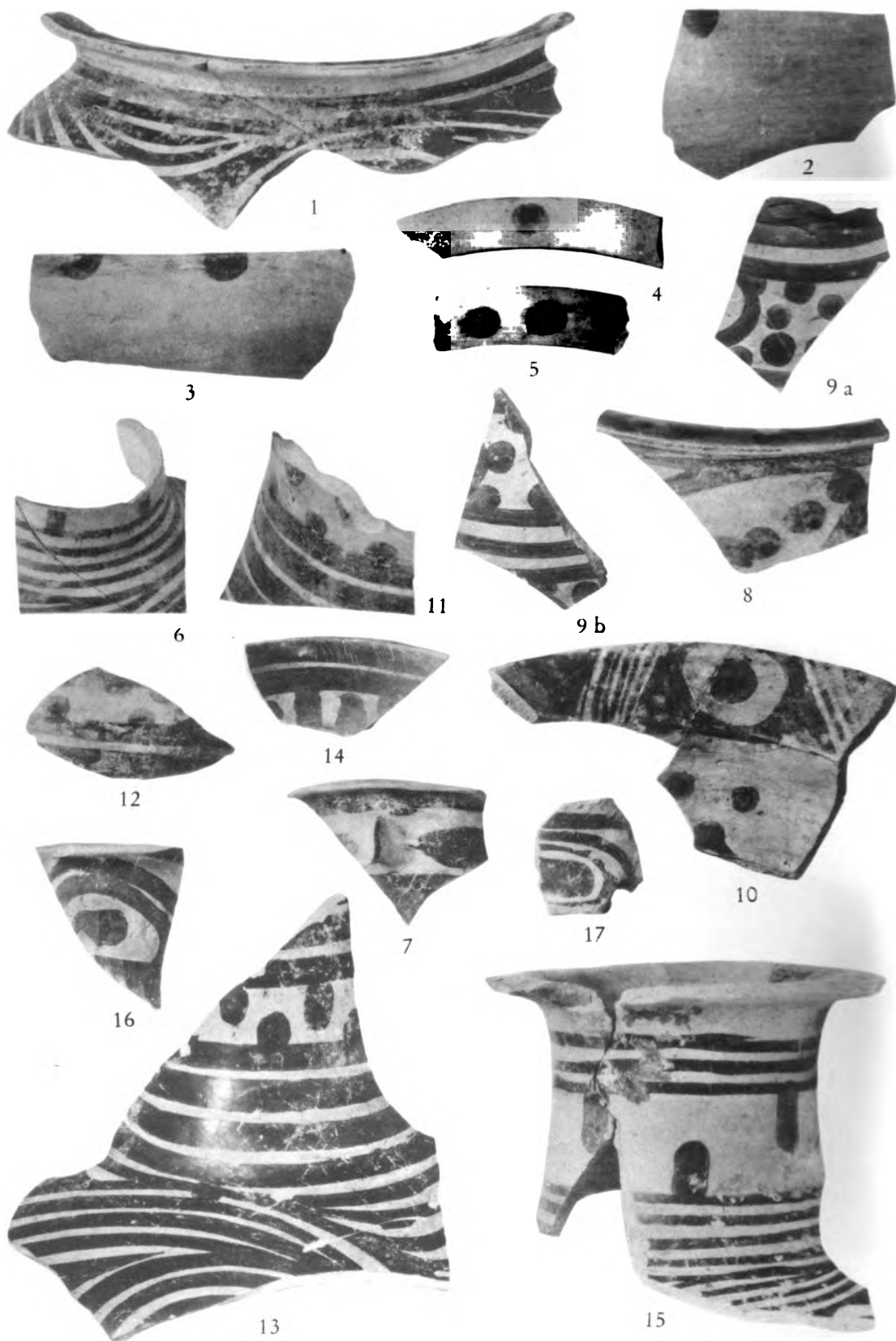
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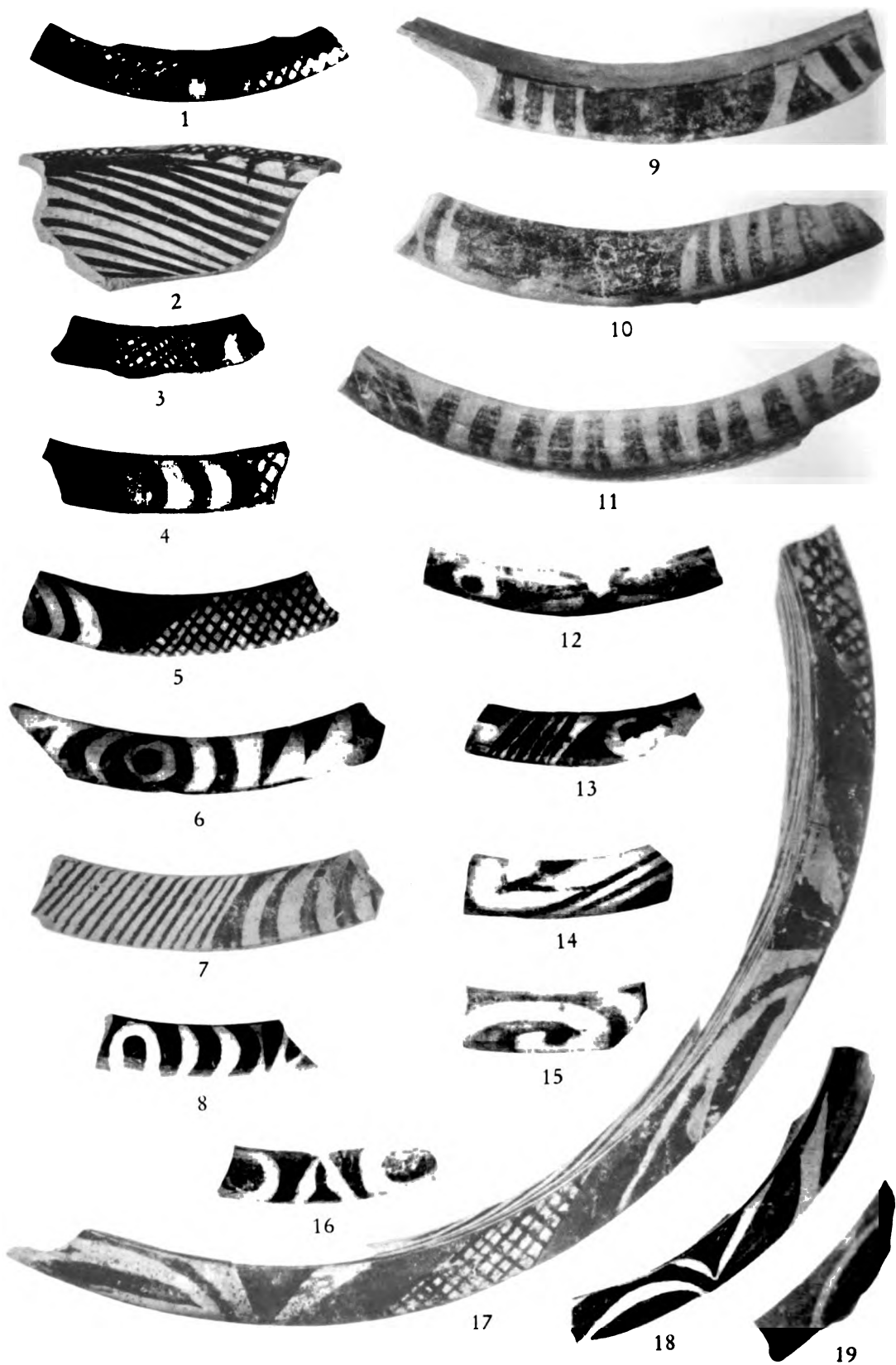
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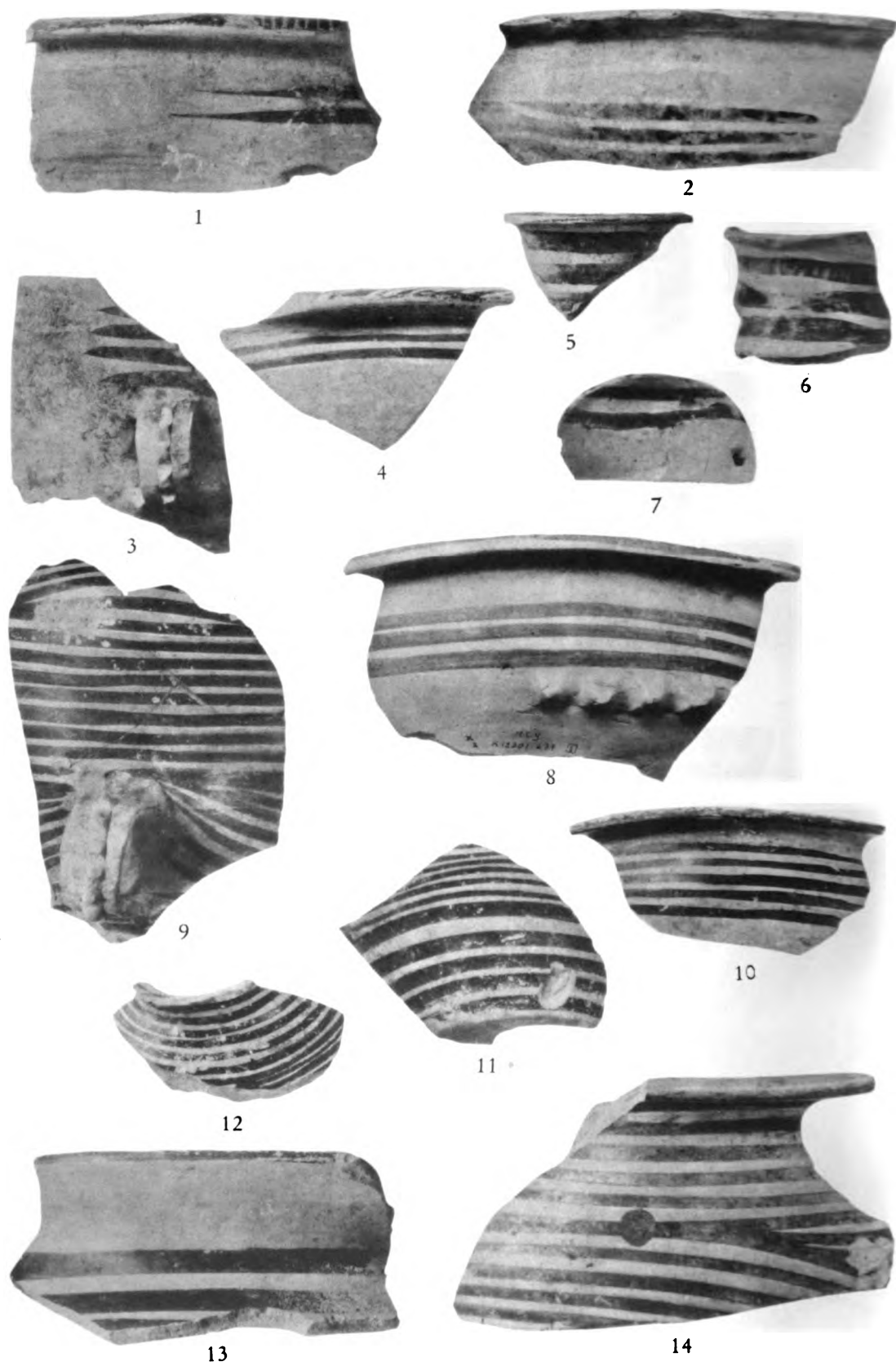
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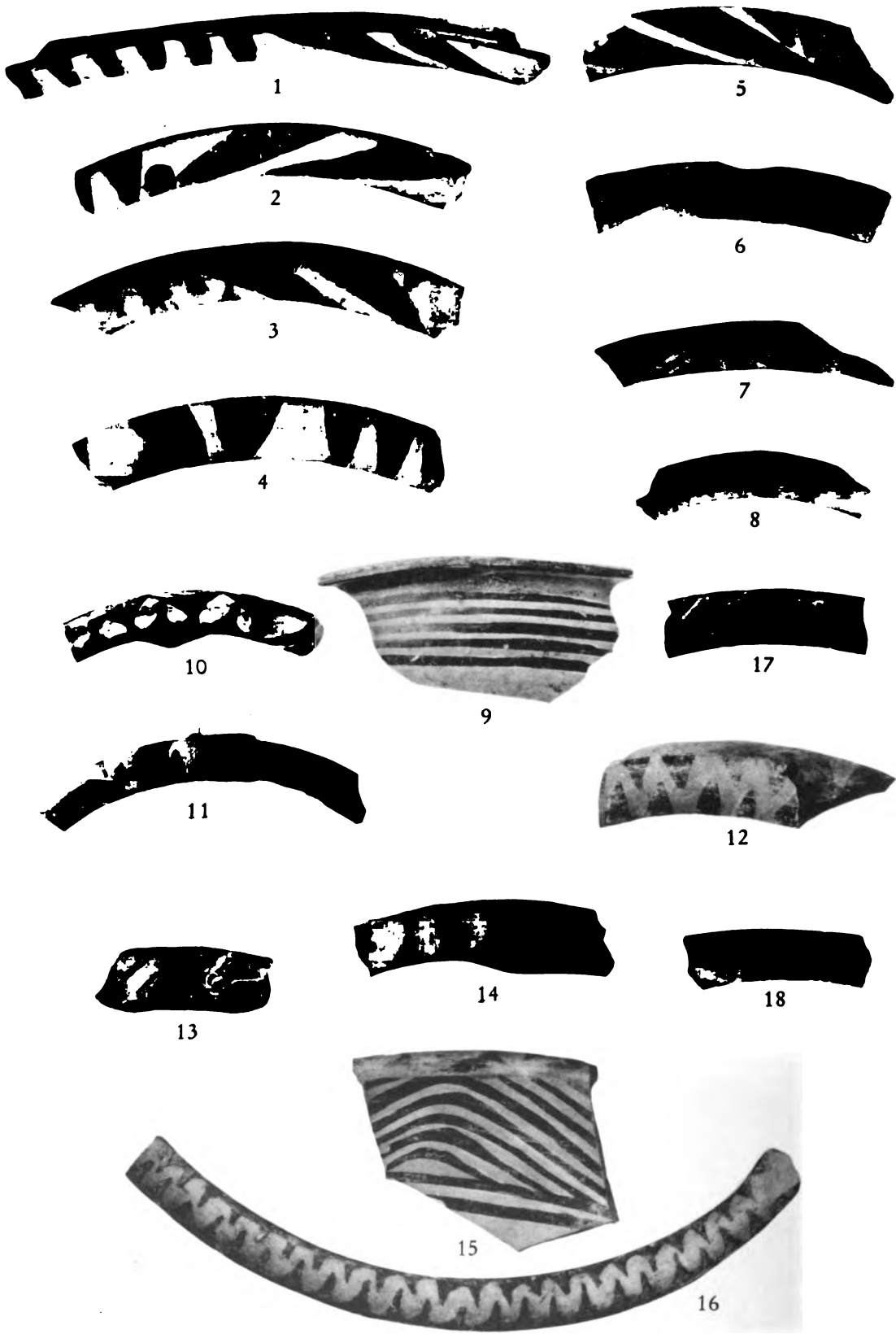
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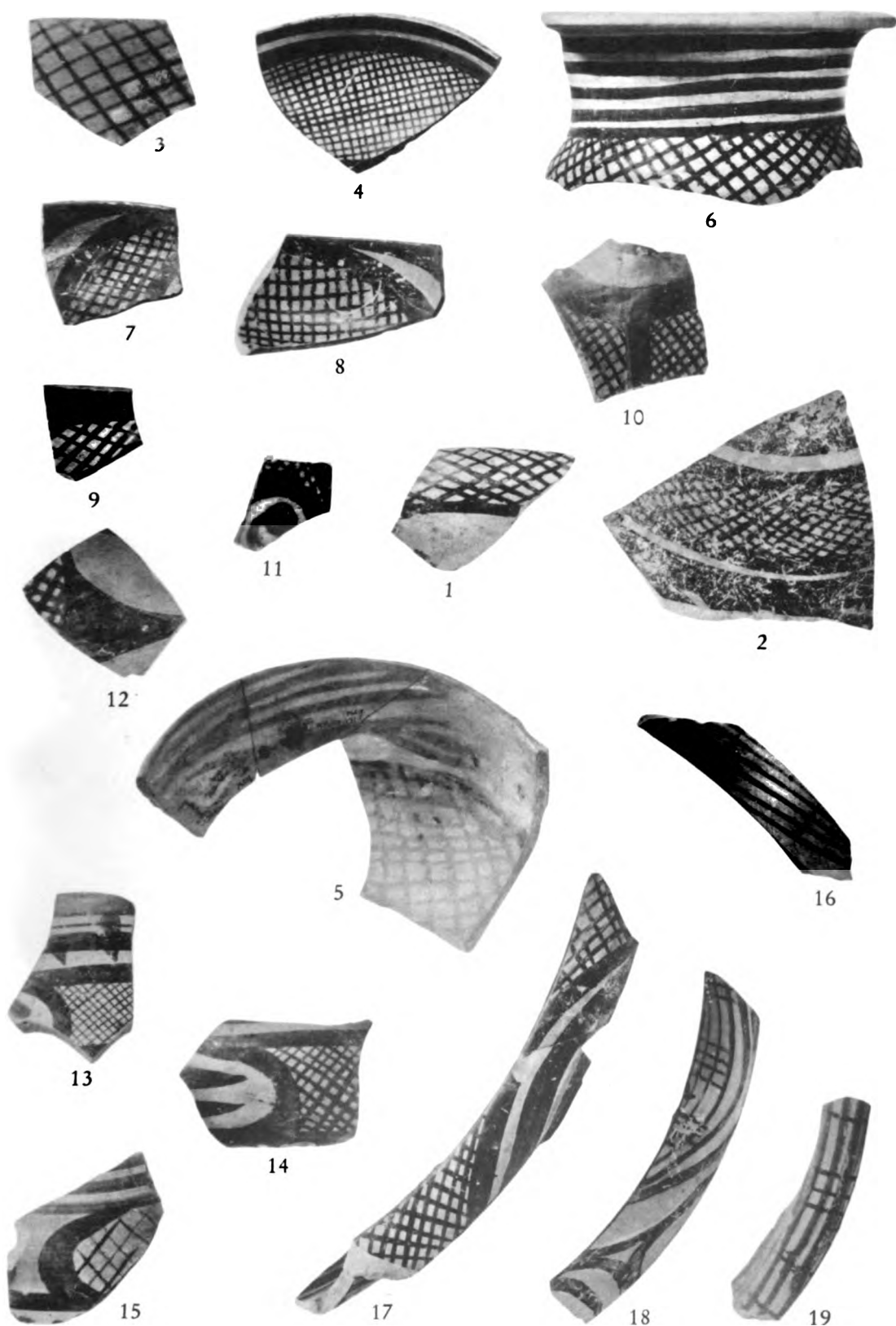


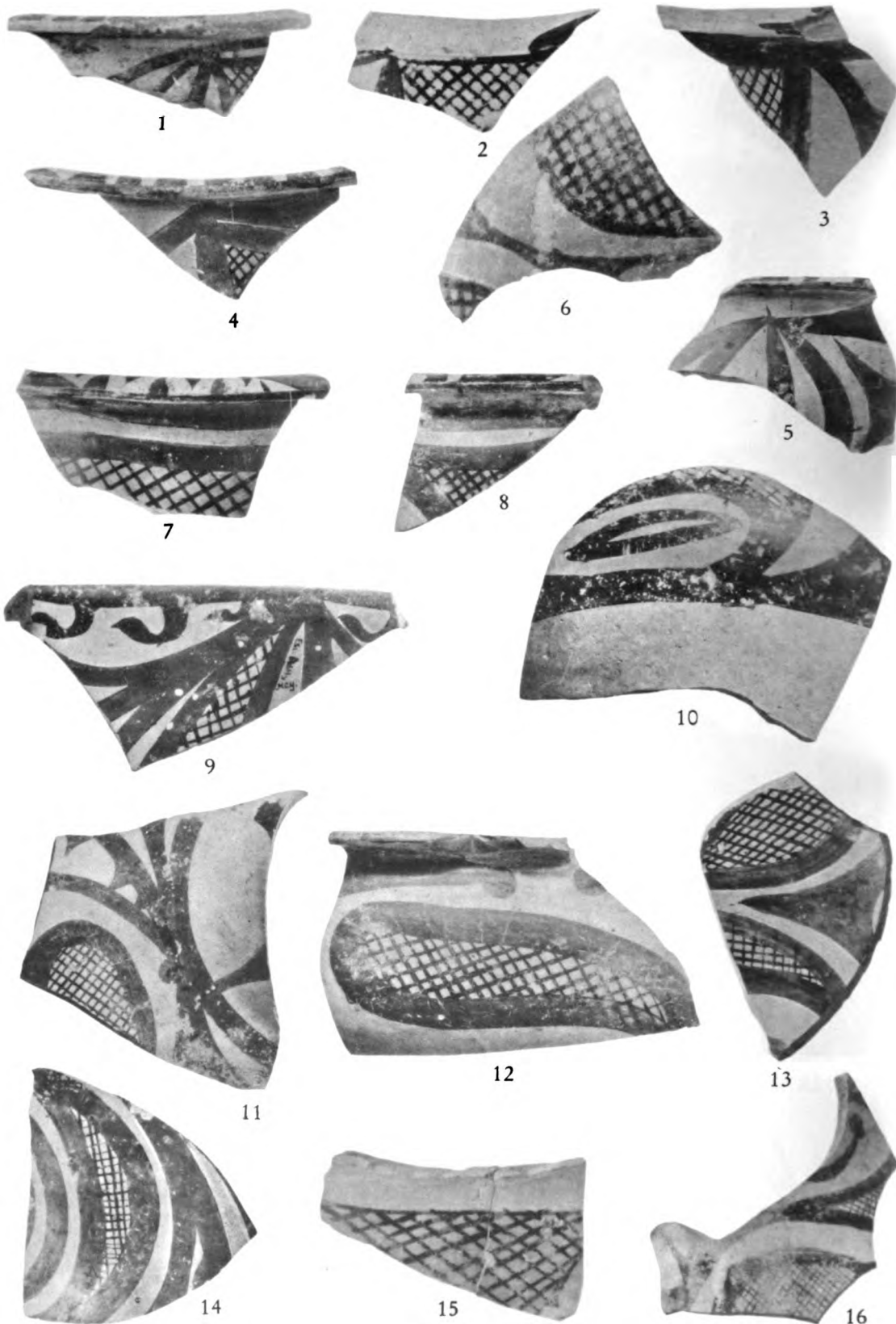
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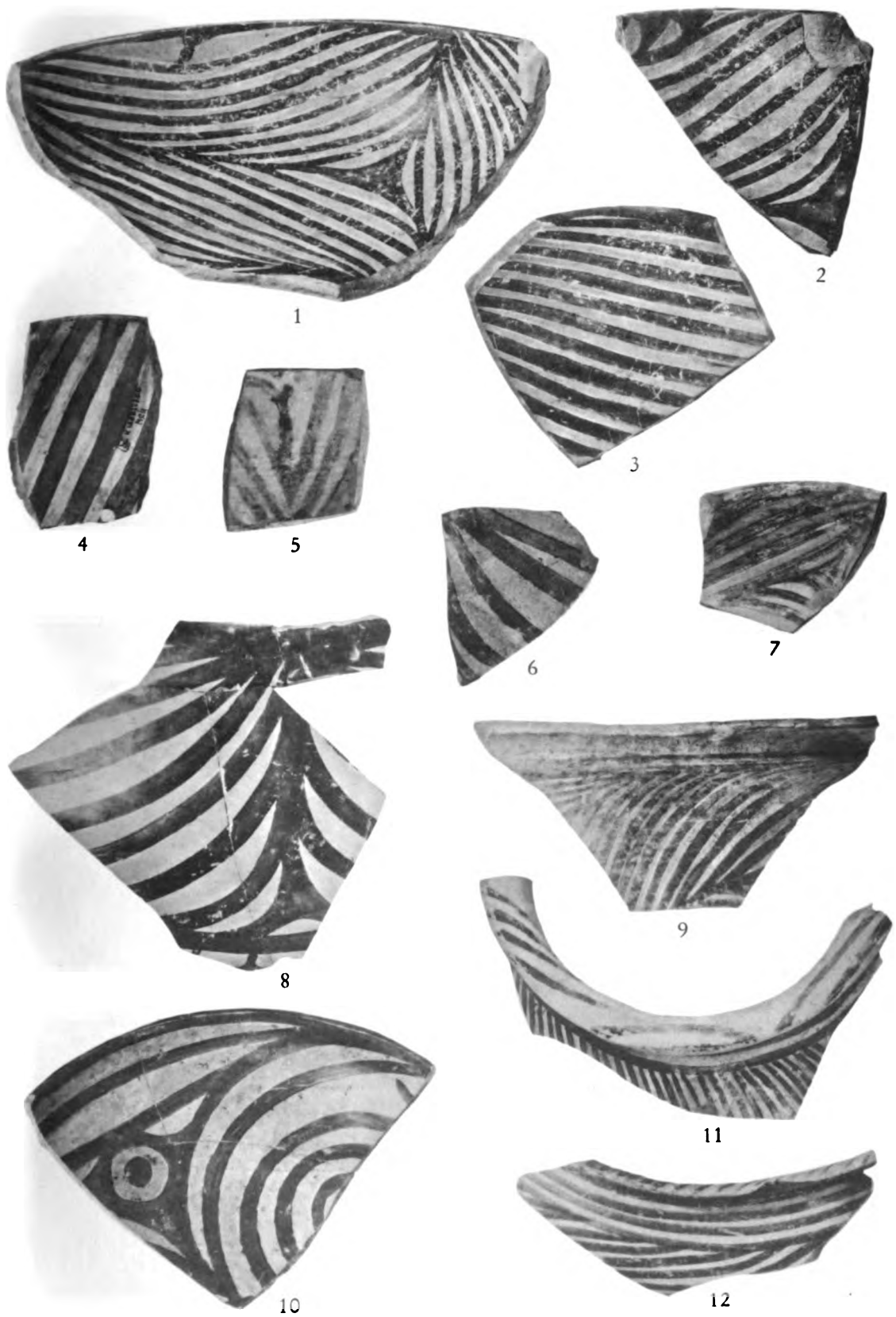


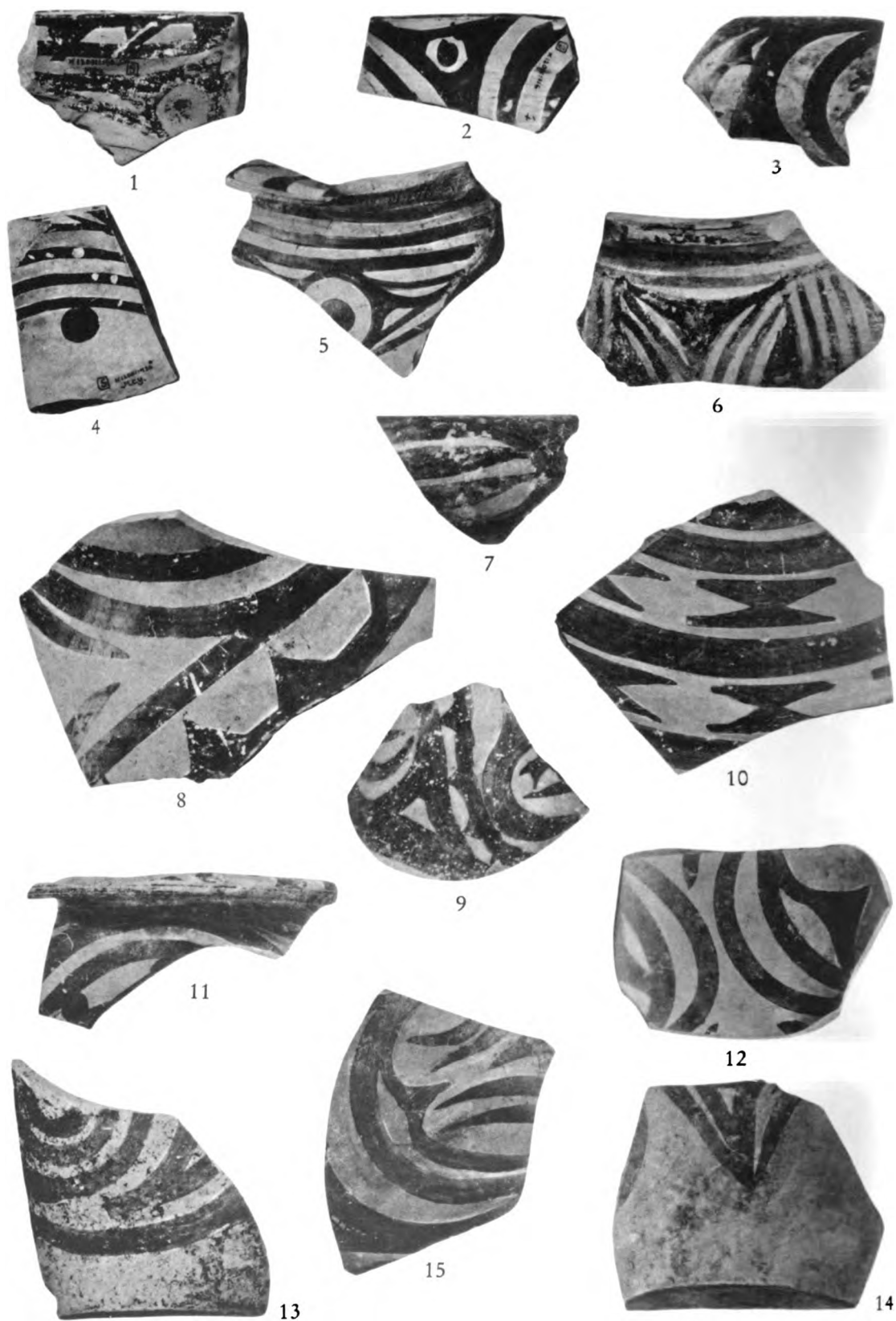














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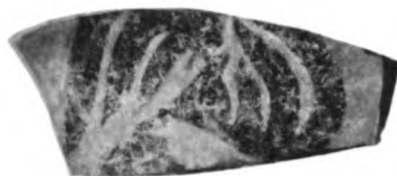
5 b



5 a



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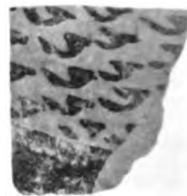
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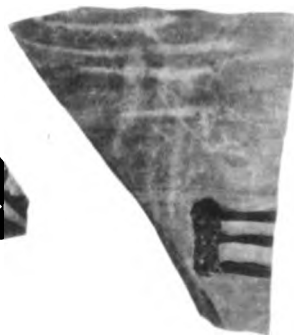
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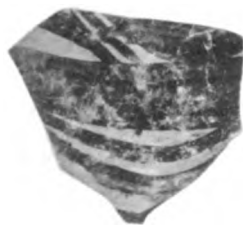
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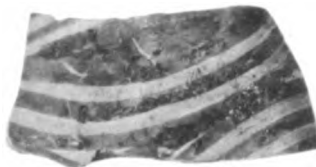
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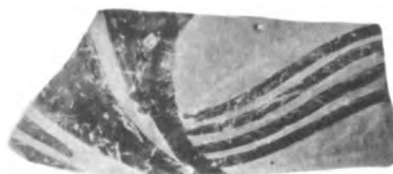
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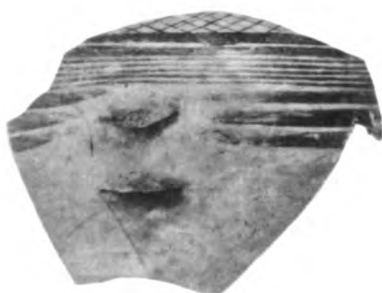
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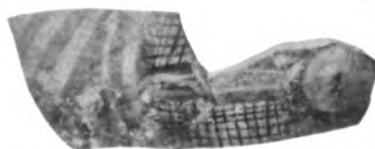
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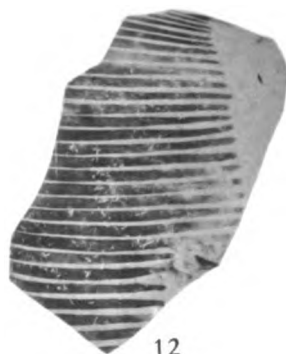
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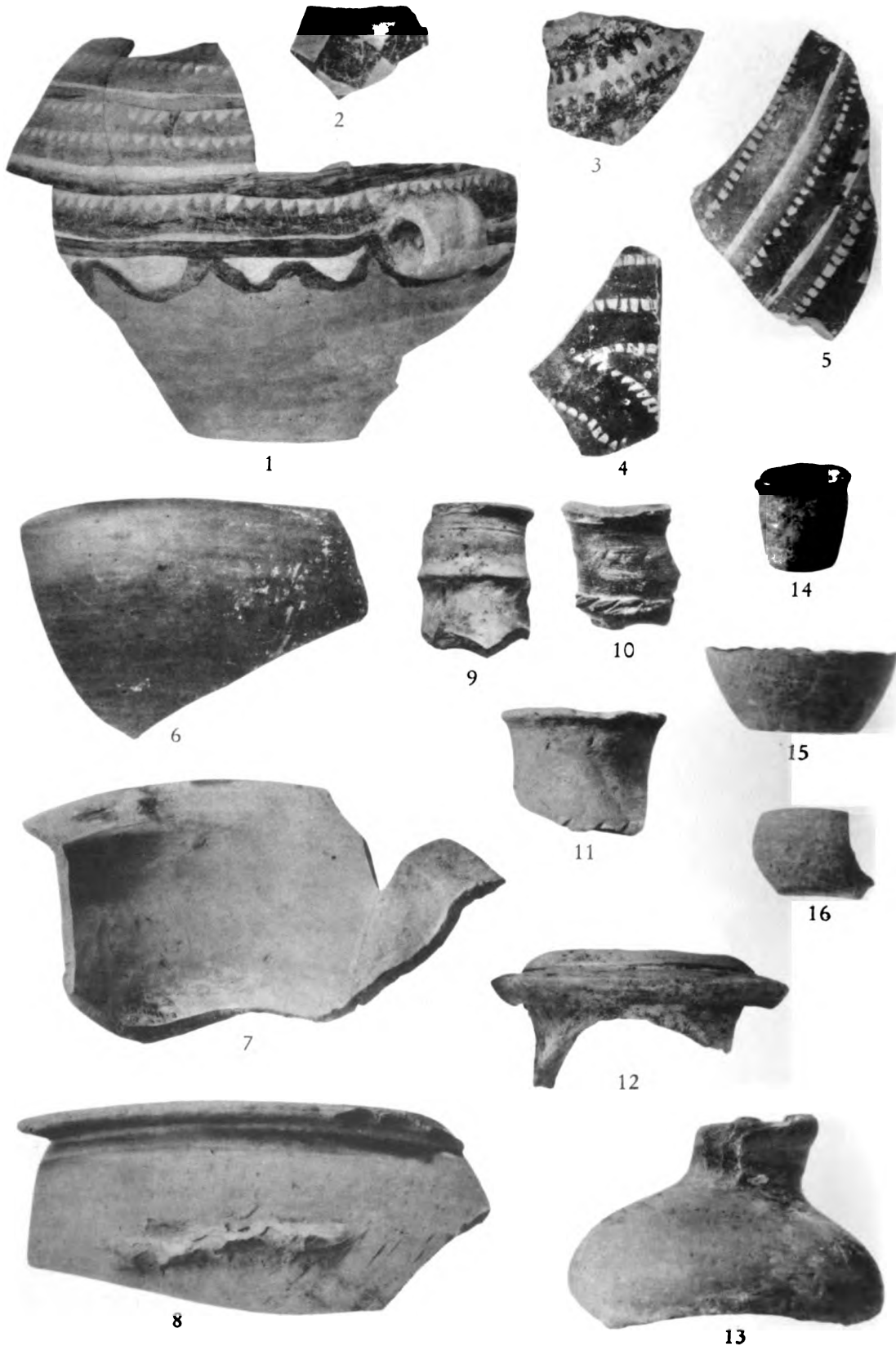
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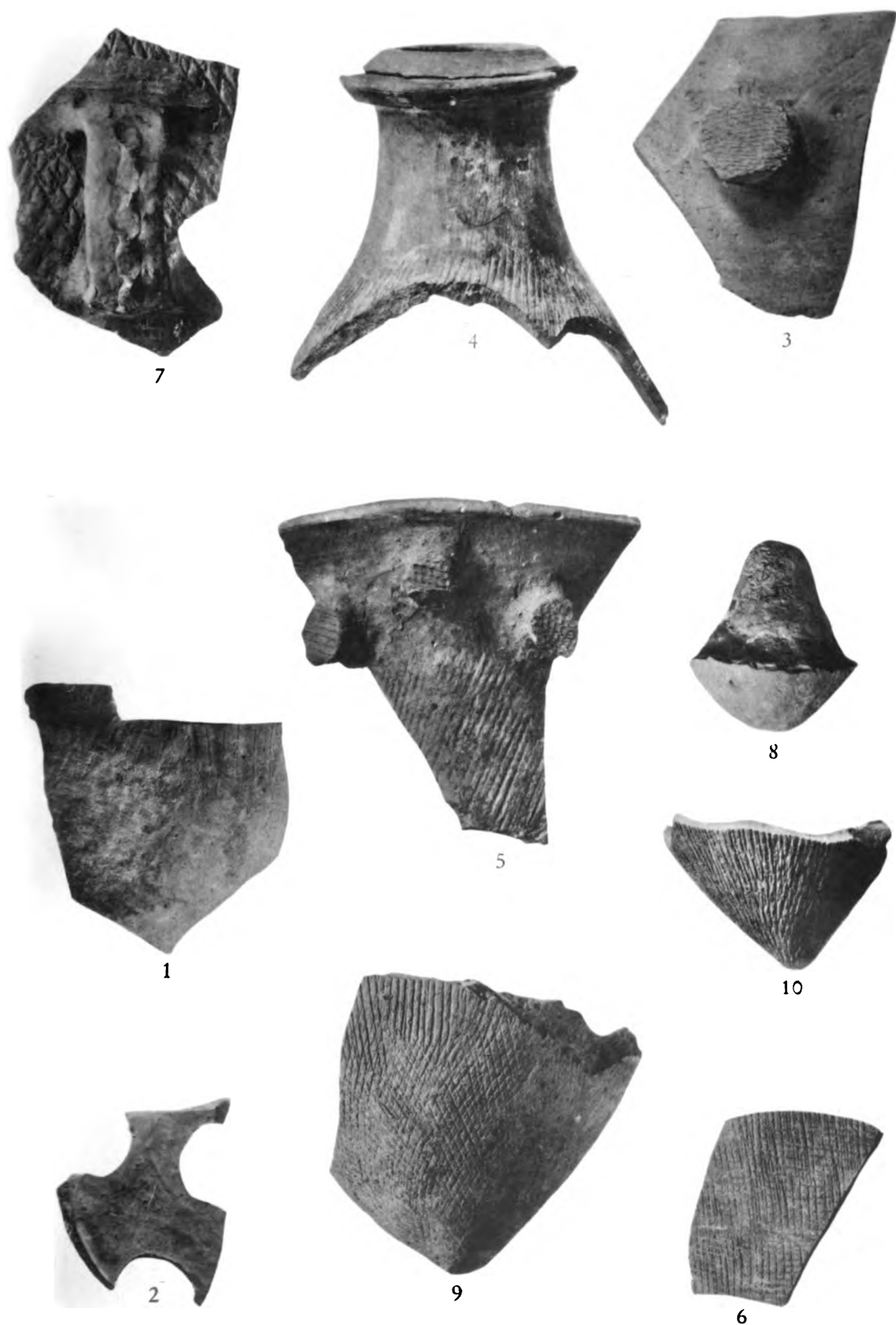


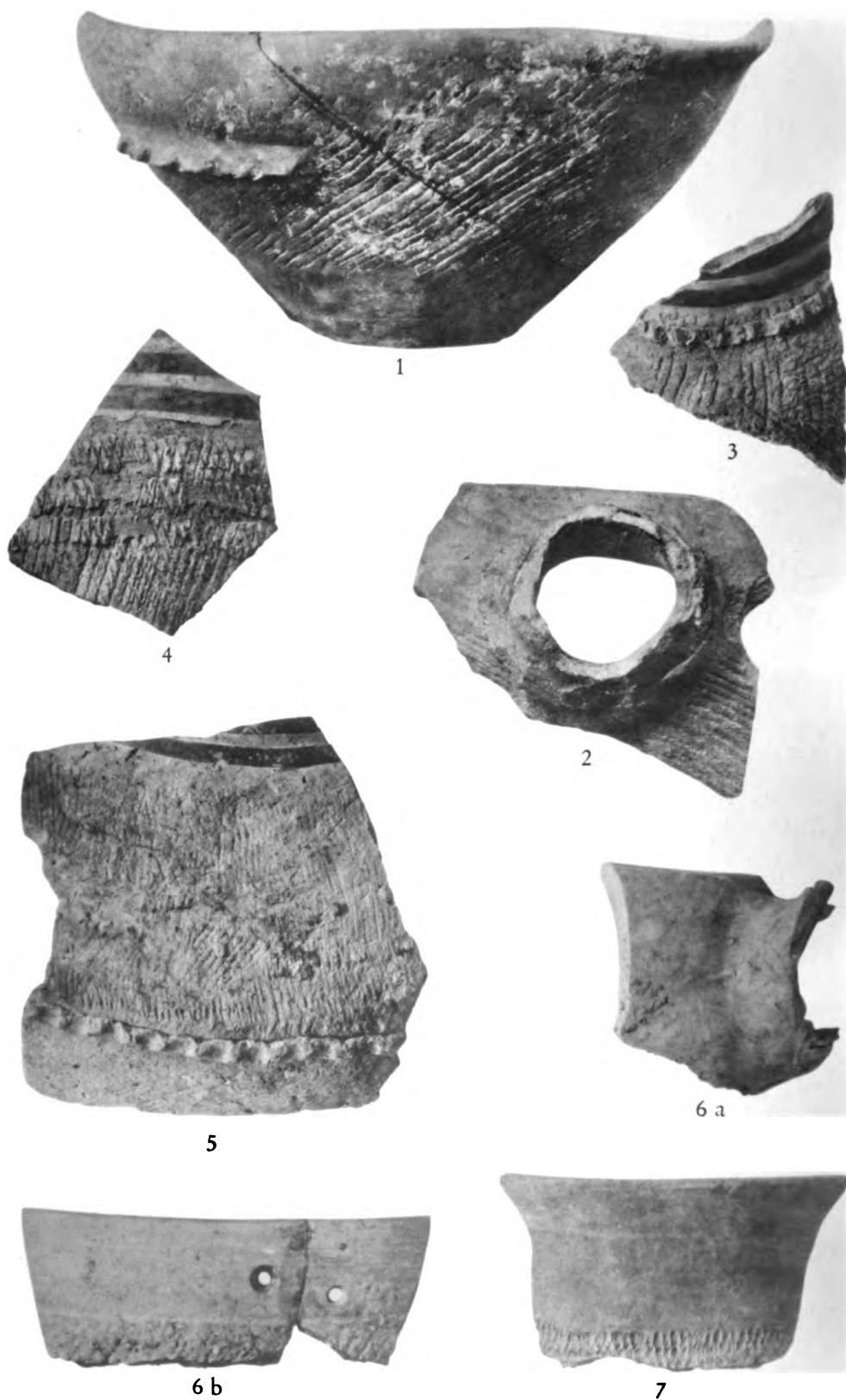
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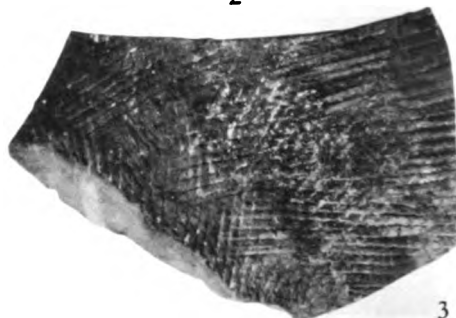
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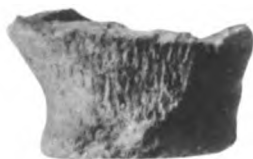
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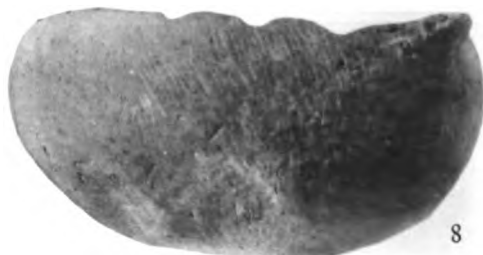
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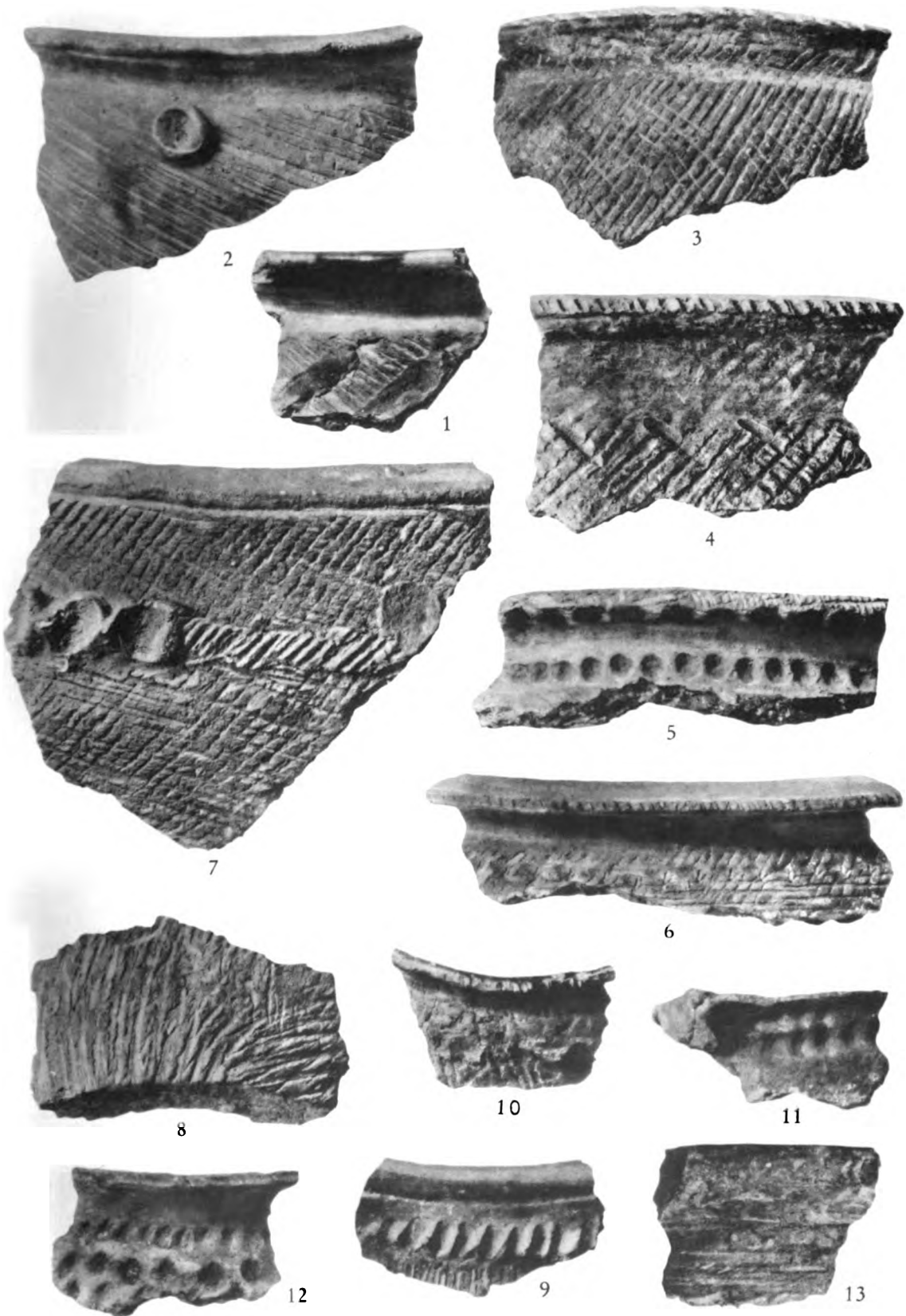
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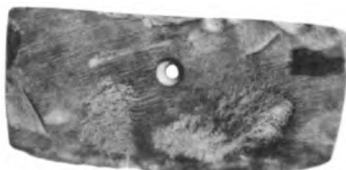
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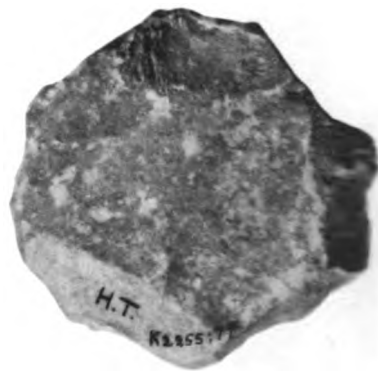
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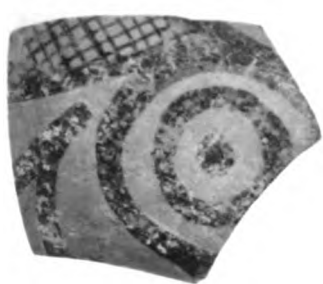
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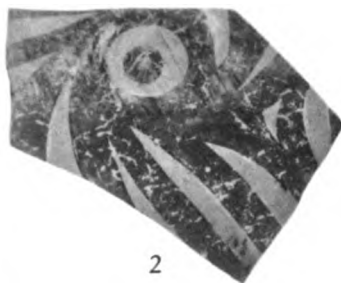




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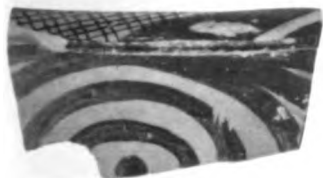
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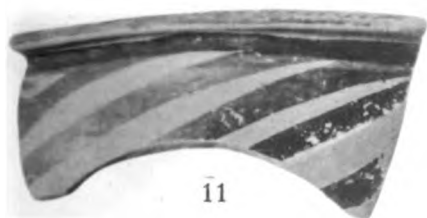
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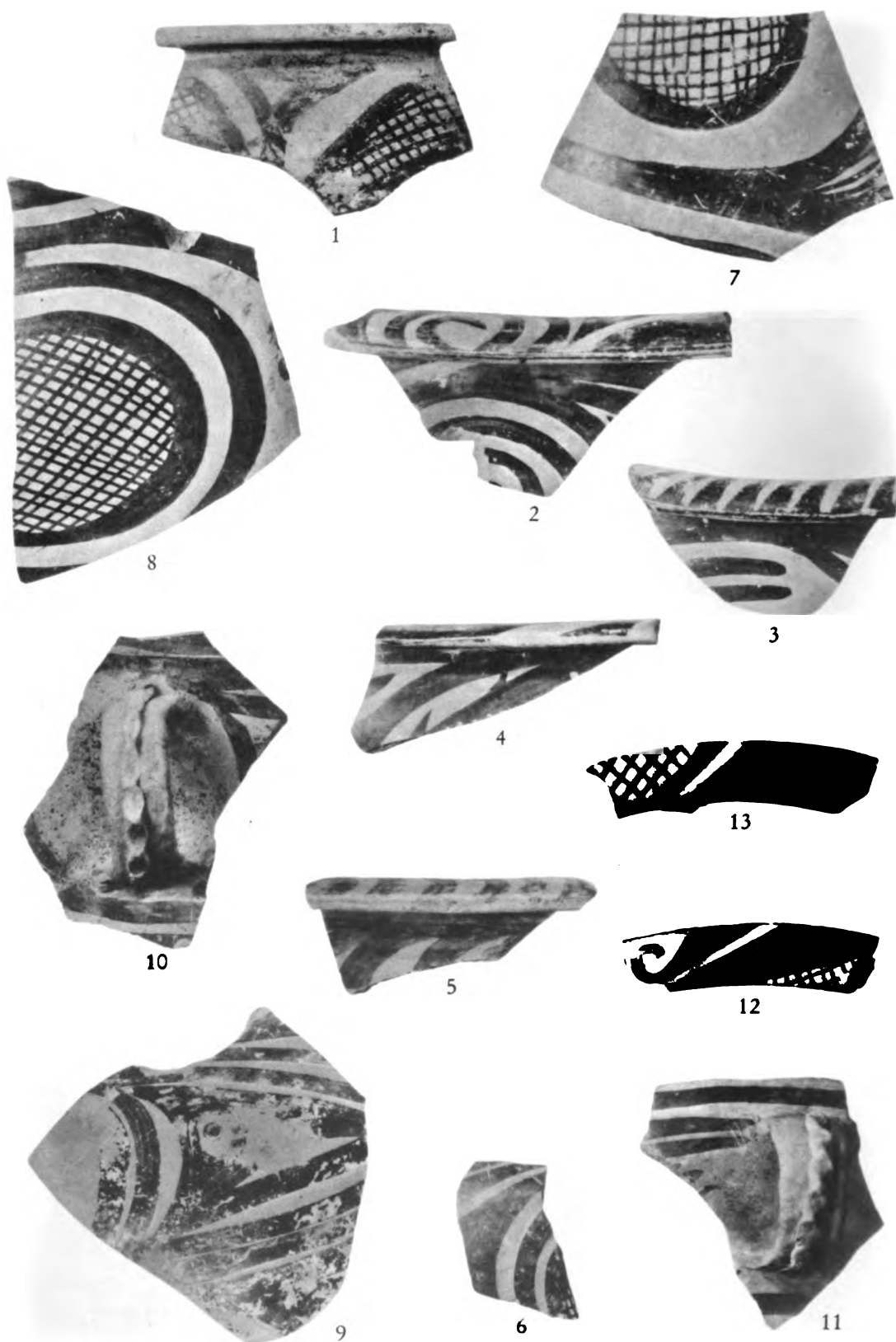
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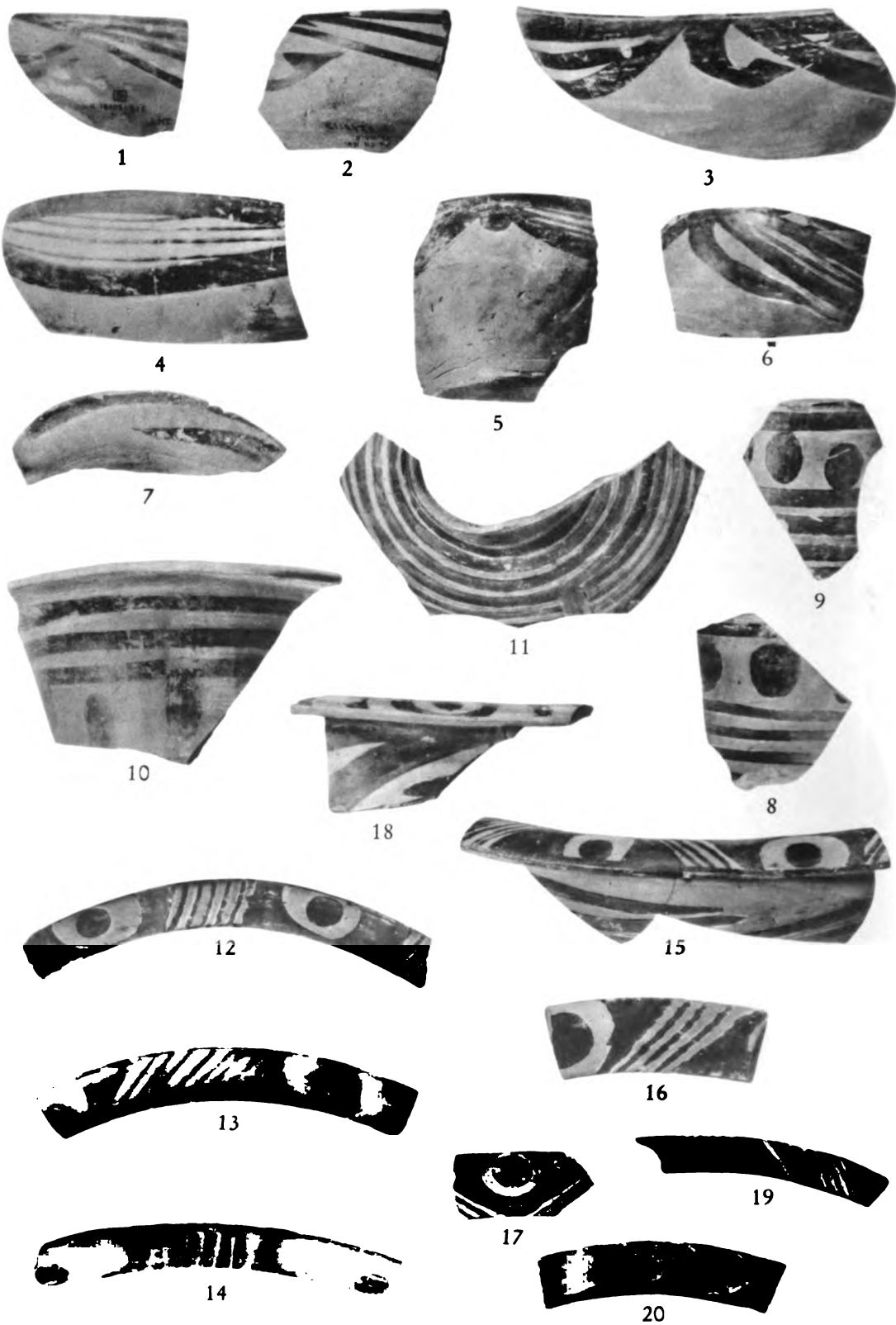
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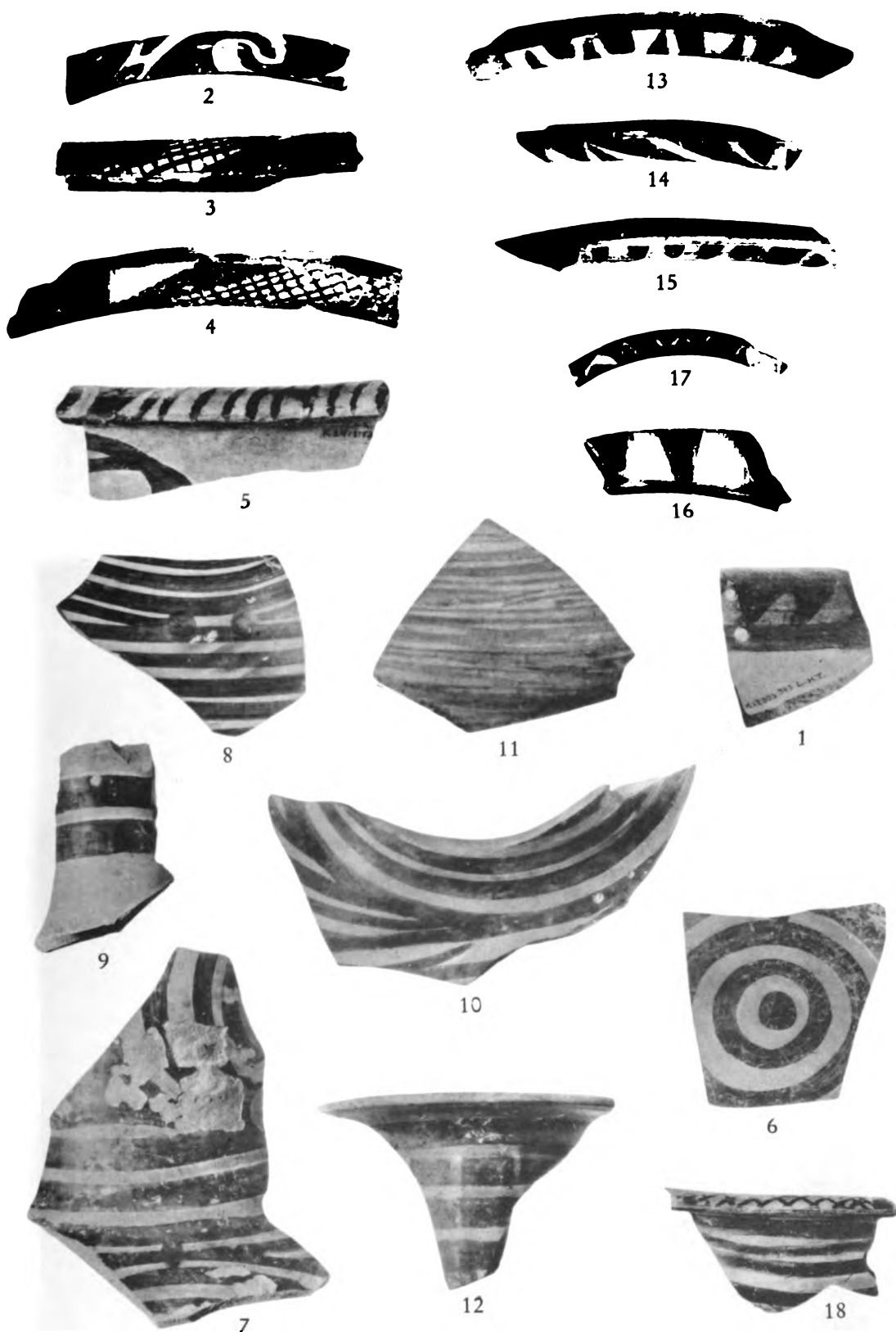


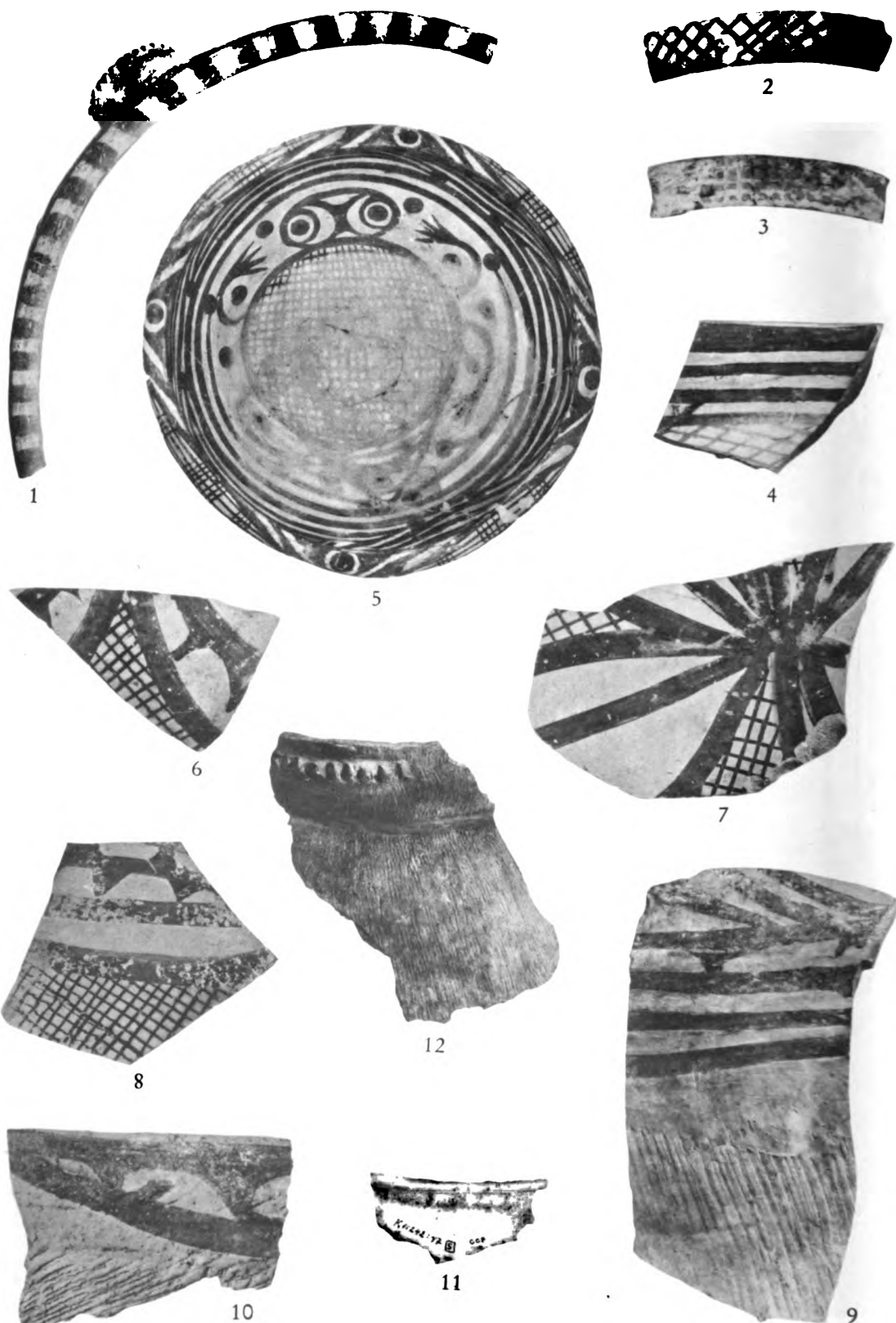
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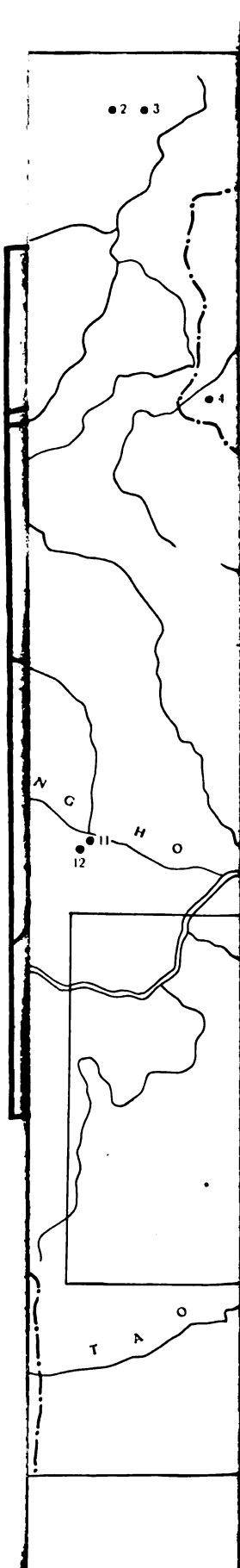














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